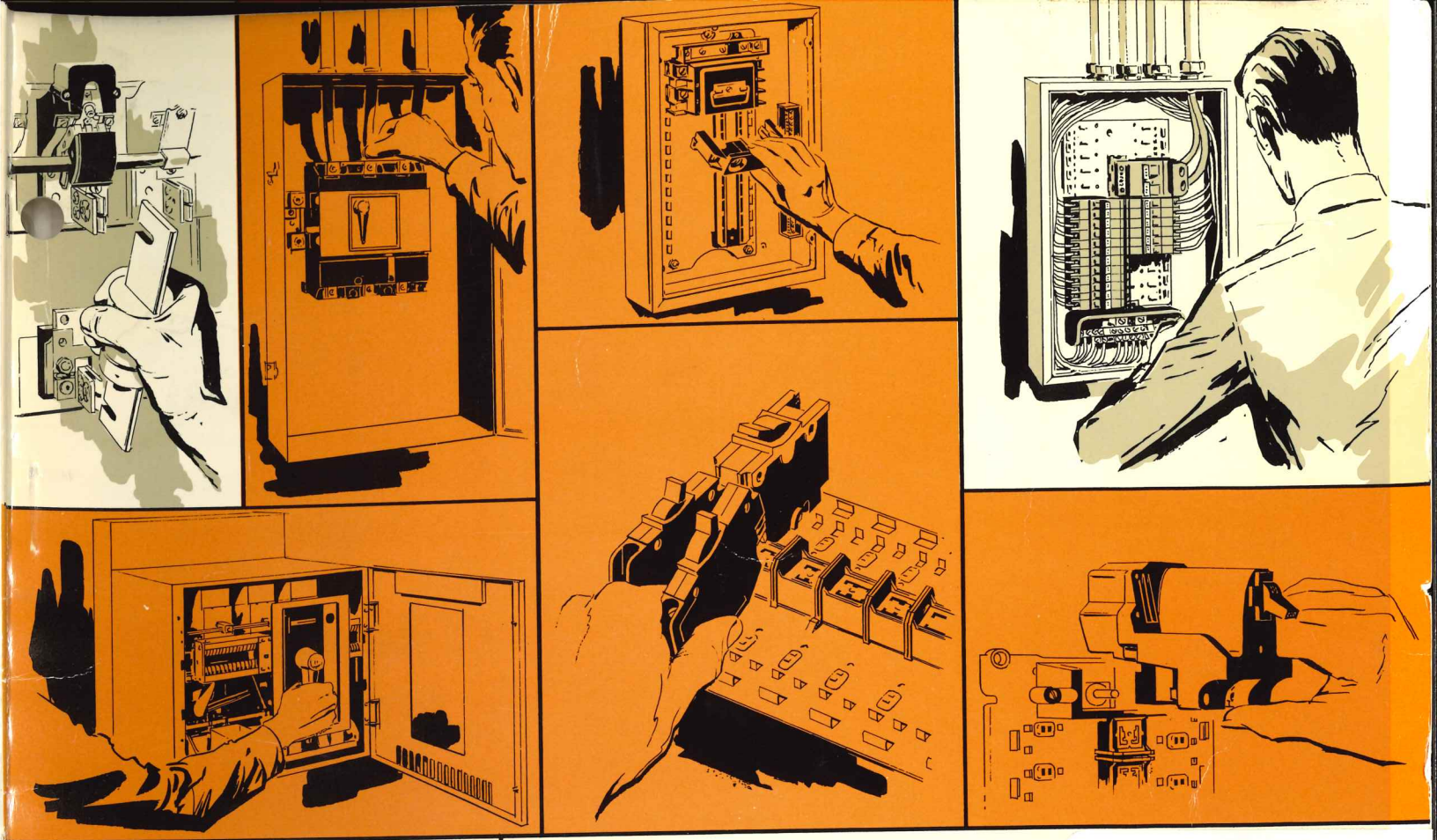
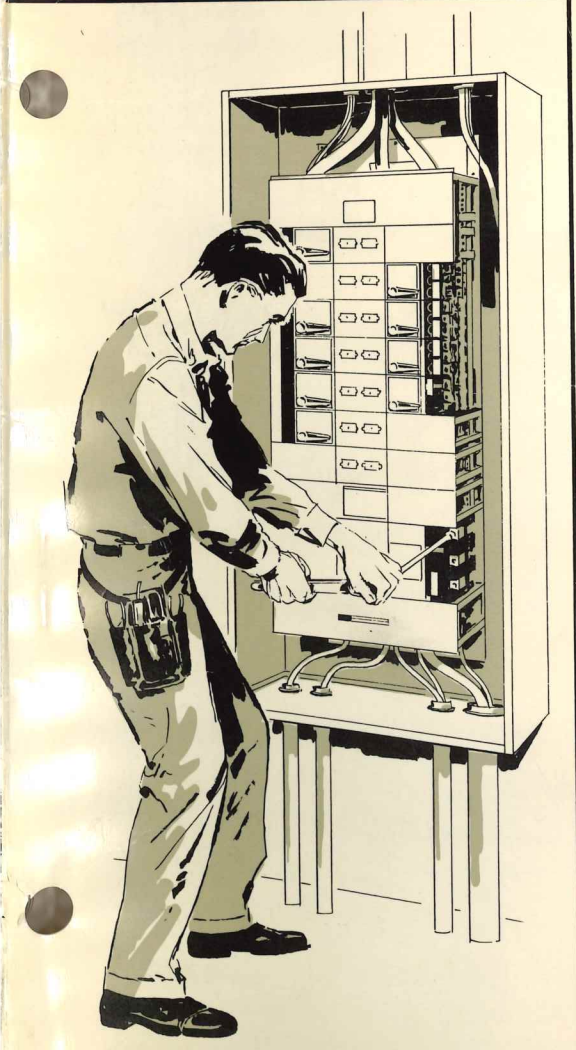




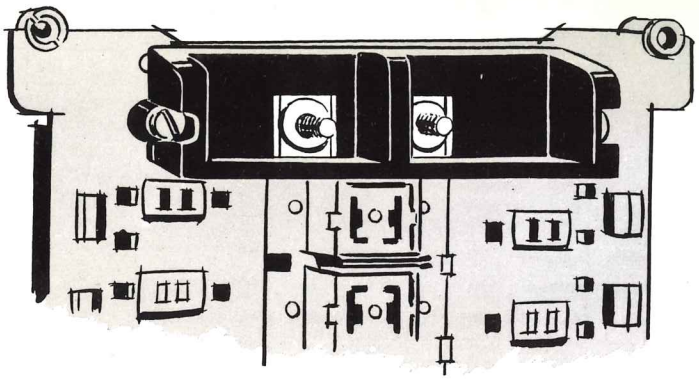
RETURN TO
DESIGN DIV.

D13-160

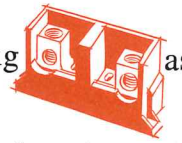
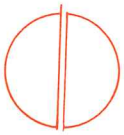
FPE

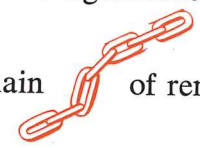
REDI-REFERENCE

SEPTEMBER 1963



the TRUE significance of these studs

It's not that they will accept either a 200 ampere frame main circuit breaker or a main lug  assembly. Nor is it the fact that this stud arrangement for main-or-lugs is in type SF fusible as well as Stab-lok enclosures. Neither is it that this latest "main in the lug area" innovation - - coupled with the exclusive FPE combination flush surface enclosure - - has not only  halved but actually quartered the number of devices and the cost of inventory needed for the vast majority of installations.

The *TRUE* significance of these studs is that they are the latest link in a chain  of remarkably creative engineering feats unmatched by any manufacturer in the service entrance field. What other manufacturer can match the thinking , the effort, the contributions, the equipment that enable contractors to make a better installation at a lower cost per circuit?

Stab-lok Circuit Breaker Load Centers 2

Stab-lok Meter Socket Combination Panel Assemblies 13

Fusible Service Equipment 17

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"Load Miser" Demand Control
"Rate Saver" Demand Control 90

Motor Control 91

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Pistolmeter 102

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FPE

Growth Through Creative Energy

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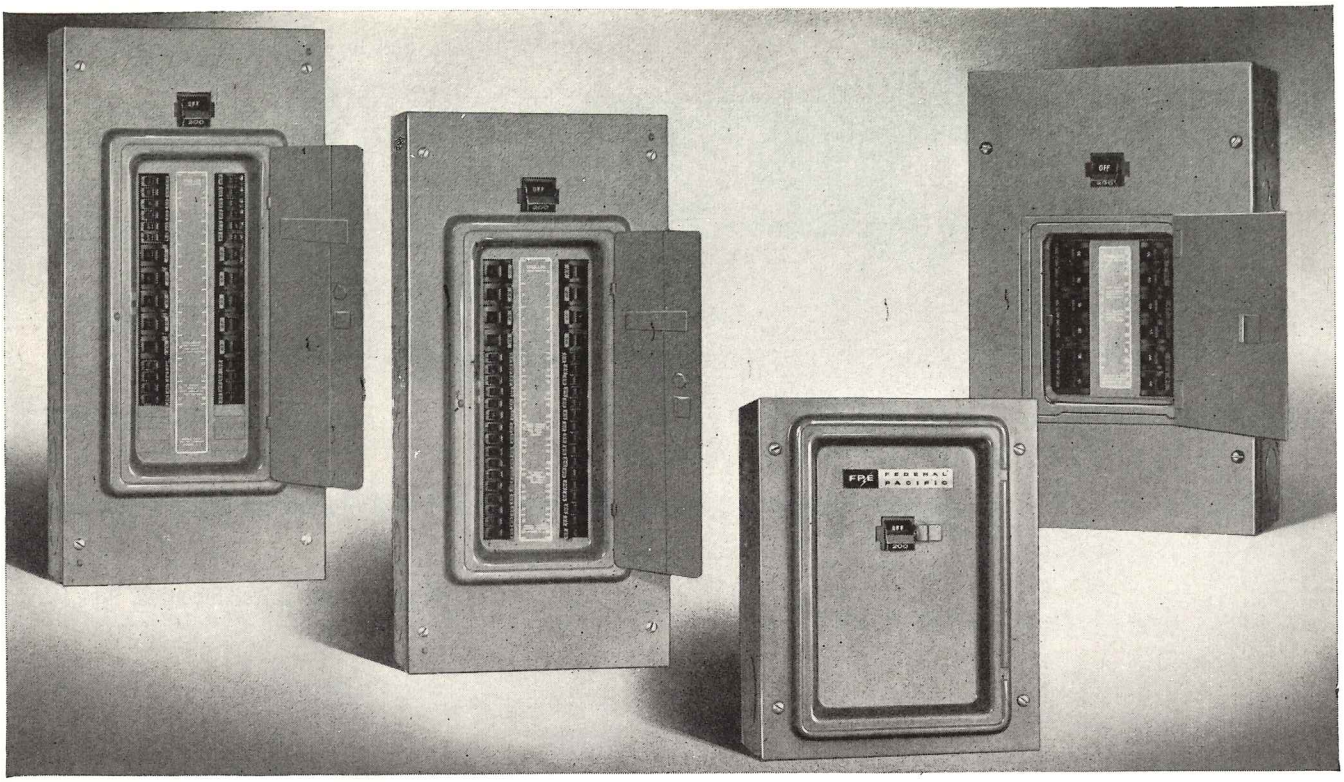
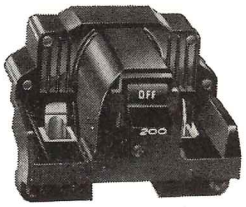
Printed in U.S.A.



NEW STAB-LOK® ENCLOSURES broaden the benefits of MAGIC MAIN BREAKERS



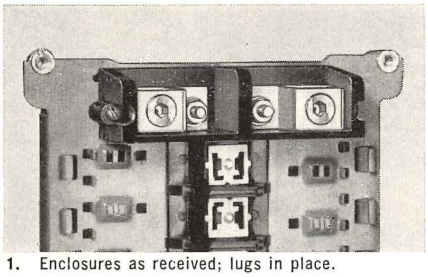
Greatest advance in inventory slashing since the flush-surface enclosure, Magic Main Breakers can now be used, from left to right, in:

1. 30-circuit, 150 amp load center, Cat. No. 120-30
2. 40-circuit, 200 amp load center, Cat. No. 124-40
3. Enclosure for individual breaker in ratings through 200 amp. Catalog No. 10200 performs the function of a safety switch . . . and at a lower cost.
4. 24-circuit, 200 amp load center, Cat. No. 112-24-200

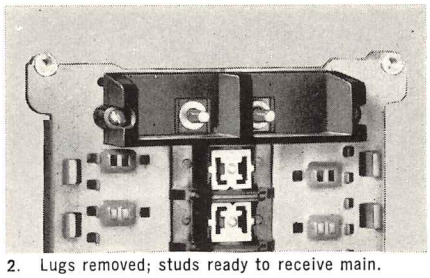
Contractor acceptance of the Magic Main, Dual Purpose enclosure concept will become even more enthusiastic with lower rated bolt-on main enclosures shown on page 3.

Transforming a load center into a main disconnect panel with either a 125, 150, 175 or 200 amp main circuit breaker and **without utilizing any bussing space** is not an illusion. It's really very simple.

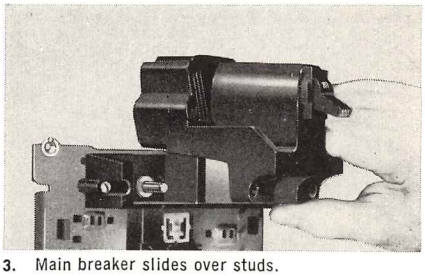
HERE'S HOW IT'S DONE



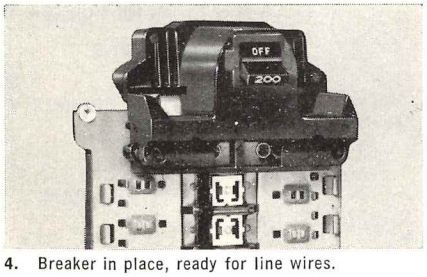
1. Enclosures as received; lugs in place.



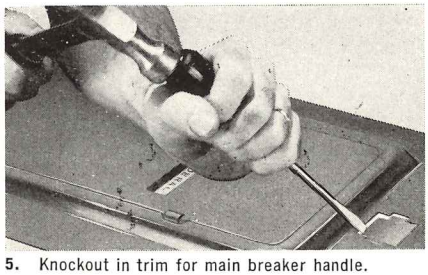
2. Lugs removed; studs ready to receive main.



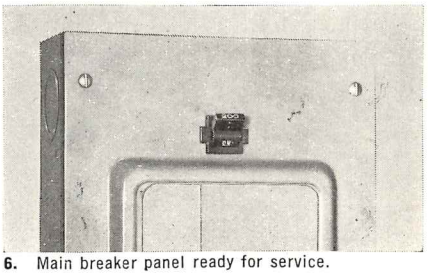
3. Main breaker slides over studs.



4. Breaker in place, ready for line wires.



5. Knockout in trim for main breaker handle.

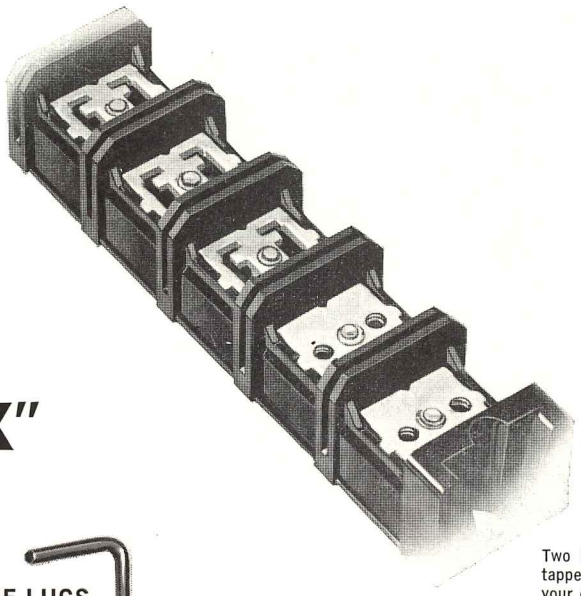


6. Main breaker panel ready for service.

THERE'S NO MYSTERY ABOUT THE **PREFIX "X"**

Stab-lok® enclosure catalog numbers

X108-16
X112-24 } **ARE PACKAGED WITHOUT LINE LUGS**
CX116-24

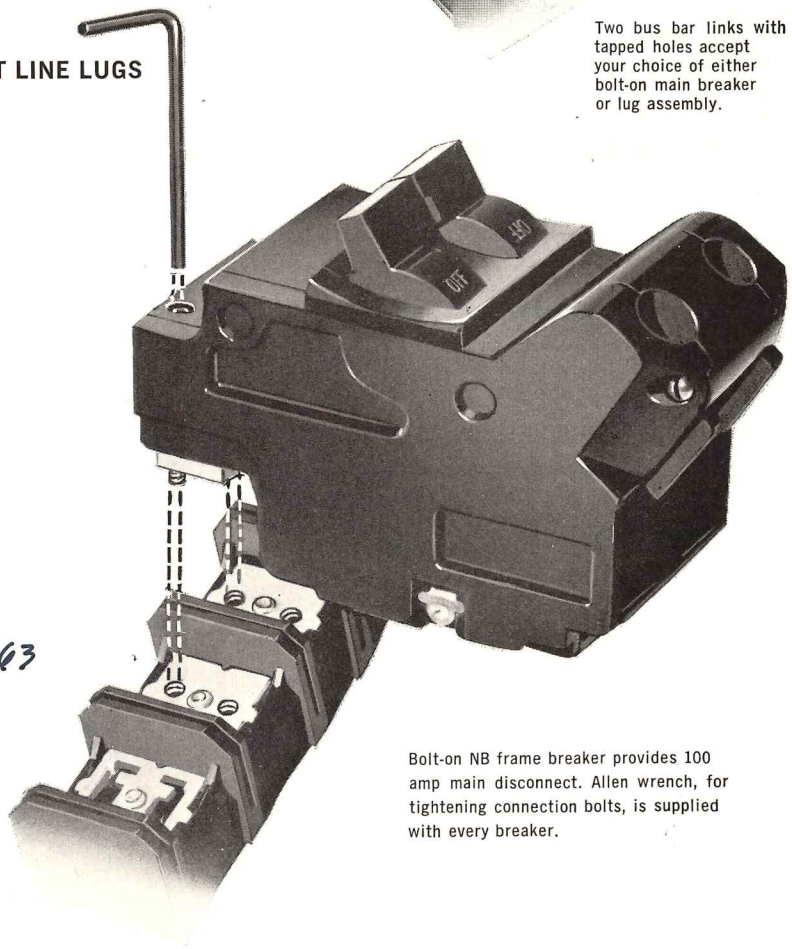


Two bus bar links with tapped holes accept your choice of either bolt-on main breaker or lug assembly.

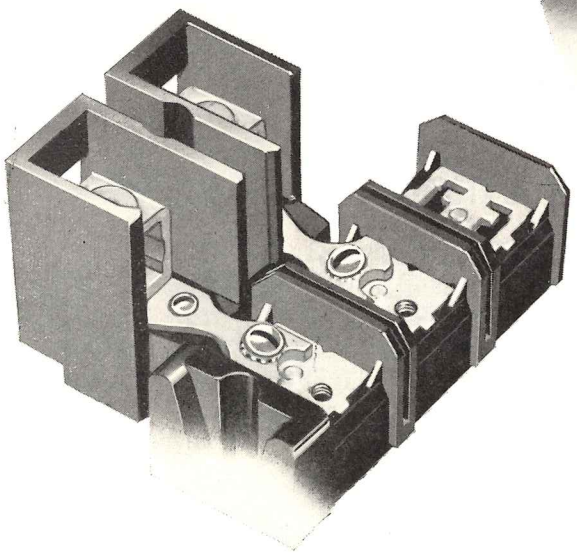
You, therefore, can make a free choice of using the enclosure as a main disconnect panel or as a load center. Inventory costs are more than halved because you have on hand a Stab-lok device that can be installed flush or surface as well as be either a load center or a main breaker panel.

Two links of the bussing have tapped holes that will receive either bolt-on lug assembly, Cat. No. L125, to provide 125 amp load center or bolt-on NB breaker to provide up to a 100 amp main circuit breaker service panel. No branch circuit capacity is sacrificed.

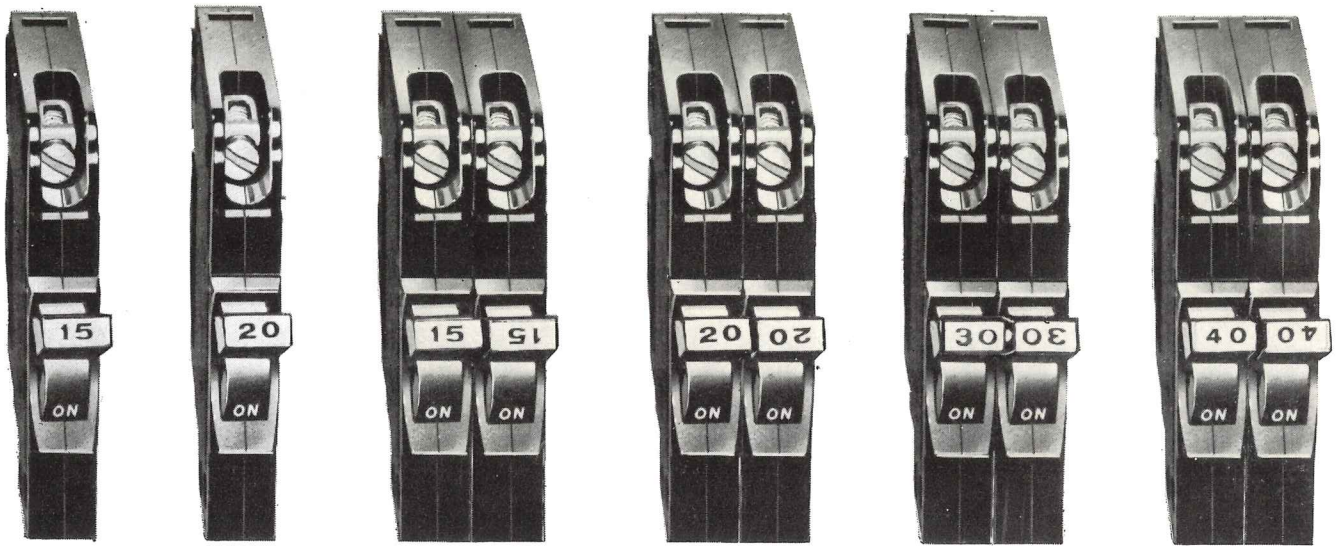
FPE Redi-reference 9-63



Bolt-on NB frame breaker provides 100 amp main disconnect. Allen wrench, for tightening connection bolts, is supplied with every breaker.



Bolt-on lug assembly provides 125 amp main lugs for load center. Lugs are approved for copper/aluminum conductors.



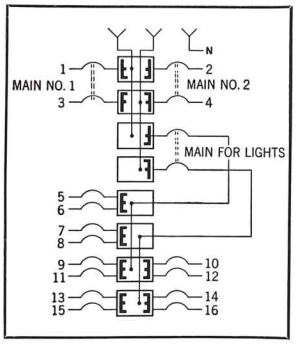
Single Pole 15 amp | Single Pole 20 amp | Double Pole 15 amp | Double Pole 20 amp | Double Pole 30 amp | Double Pole 40 amp

INDIVIDUAL STAB-LOK NC BREAKERS, 1 and 2 pole, can further cut your installation costs

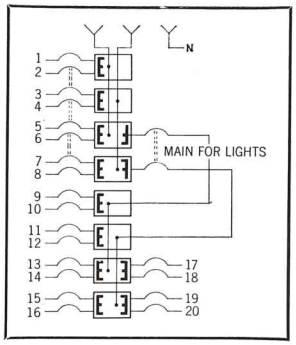
"E"-slot bussing with single and double pole type NC Stab-lok Circuit Breakers are primarily responsible for the "low cost per circuit" of Stab-lok installations. Value of BUSSING SPACE PRACTICALLY DOUBLED.

With new slot arrangement on split bus panels and the versatile new enclosure Cat. No. 104-12-100, contractors can even more fully utilize the advantages of Stab-lok type NC breakers.

NEW SLOT ARRANGEMENT FOR SPLIT BUS PANELS INCREASES CAPACITY—AT NO ADDITIONAL COST

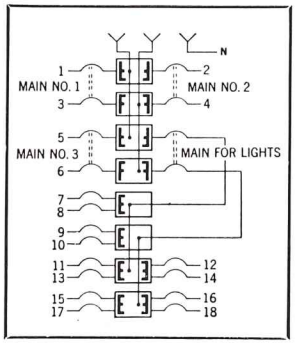


Cat. No. 1206-12 (OLD)
Capacity: **two,** 2 pole NA
twelve, 1 pole NC

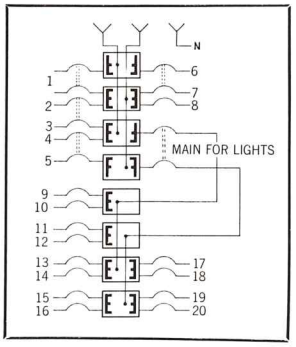


Cat. No. C1206-12-125 (NEW)
Capacity: **three,** 2 pole NC
fourteen, 1 pole NC

NEW BUSSING ADDS one, 2 pole and two, 1 poles

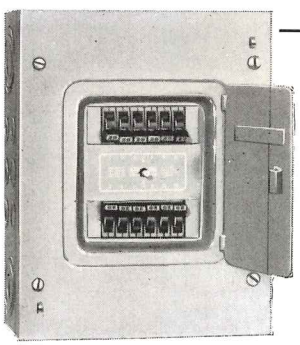


Cat. No. 1306-12 (OLD)
Capacity: **three,** 2 pole NA
twelve, 1 pole NC

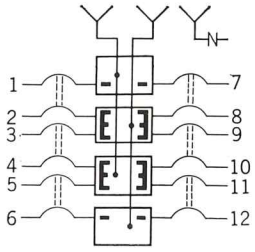


Cat. No. C1306-12-125 (NEW)
Capacity: **four,** 2 pole NC
thirteen, 1 pole NC

NEW BUSSING ADDS one, 2 pole and one, 1 pole



LITTLE GIANT ENCLOSURE CAT. NO. 104-12-100



Utilizing type NC breakers, this device accepts as many as six two poles up to 40 amp or any combination of single-or-two pole breakers up to 12 poles. This is the smallest enclosure to provide 6 disconnects in accordance with NEC paragraph 230-70g covering the 6 disconnect means. For further evidence of "lower cost per circuit," check the list price on page 6.

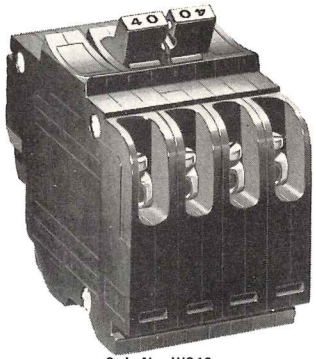
Stab-in Main and Branch Circuit Breakers

Amp	ONE POLE, 120/240 V				TWO POLE, 120/240 V								THREE POLE, 240 V			
	NC ½"		NA 1"		NC 1"		NA 2"		Type N Swn. Neut.		Water Heater Breaker		NA		NA Delta	
	Cat. No.	List Price	Cat. No.	List Price	Cat. No.	List Price	Cat. No.	List Price	Cat. No.	List Price	Cat. No.	List Price	Cat. No.	List Price	Cat. No.	List Price
15	015	$3.10	15	$3.10	0215	$6.90	215	$6.90	N215	$9.10	W215	$6.90	3P15	$22.00	L3P15	$22.00
20	020	3.10	20	3.10	0220	6.90	220	6.90	N220	9.10	W220	6.90	3P20	22.00	L3P20	22.00
30			30	3.10	0230	6.90	230	6.90	N230	9.10	W230	6.90	3P30	22.00	L3P30	22.00
40			40	3.10	0240	6.90	240	6.90			W240	6.90	3P40	22.00	L3P40	22.00
50			50	3.10			250	6.90					3P50	22.00	L3P50	22.00
															Prices Include Locking Hasp 3LOK	
60							2P60	6.90								
70							2P70	13.00					3P70	28.00	L3P70	28.00
100							2P100	17.60					3P100	32.00		

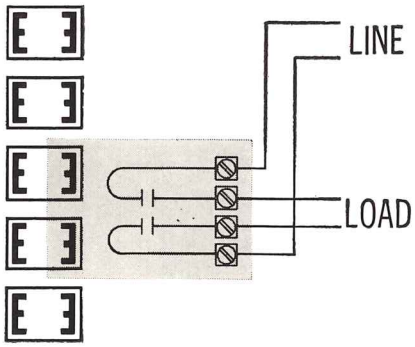
Bolted Main Breakers for Field Installation

100							NB100	$20.50								
125							2B125	41.00								
150							2B150	41.00								
175							2B175	41.00								
200							2B200	41.00								

NOTE: Suffix "NI" to indicate Class NI has been omitted from catalog numbers above to conserve space.
NOTE: Breakers 100A and over have lugs suitable for aluminum or copper conductors.



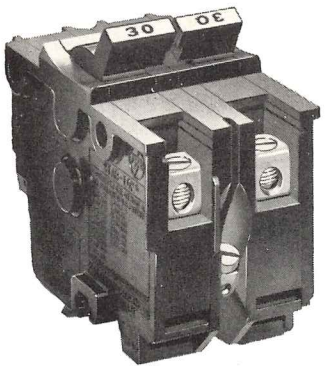
Cat. No. W240



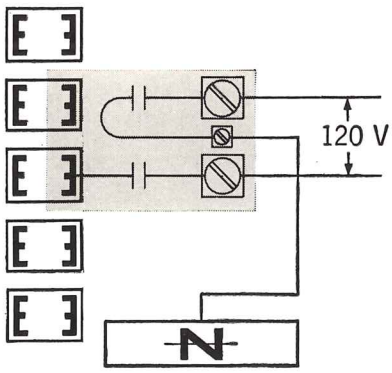
WATER HEATER

2-Pole Circuit Breaker—15, 20, 30, 40 Amp

These breakers provide a completely separate 120/240V., a.c., 3 wire "off-peak" water heater circuit that has all connections within the enclosure and is not connected electrically to the main bus. No pigtails to splice in the gutters. All line and load connections to these breakers are through solderless lugs.



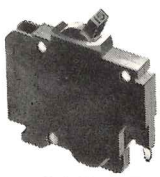
Cat. No. N230



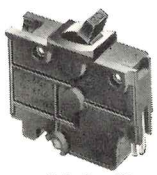
SWITCHING NEUTRAL

2-Pole Circuit Breakers—15, 20, 30 Amp

Meet the requirements for gasoline service stations as specified by N.E.C. These breakers disconnect simultaneously all conductors of a circuit: the neutral and "hot leg", from the distribution panel to the gasoline dispensing island. The breakers can be housed in standard enclosures, eliminating the necessity for costly custom built panels.

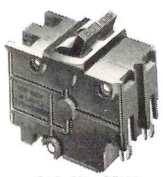


Cat. No. 015



Cat. No. 20

Cat. No. 0230



Cat. No. 2P50

Cat. No. 2P100

Cat. No. 3P70

Cat. No. 3P100

FPE Redi-reference 9-65

CLASS
1000 STAB-LOK® Circuit Breaker Load Centers

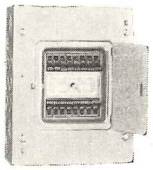
Stab-lok enclosures are packaged to reduce costs. Box, interior and trim are all in one carton. Only one item to order. Only one item to handle.

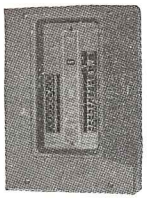
1 to 42 Circuits — Main Lugs Only — 30 to 400 Amp Mains

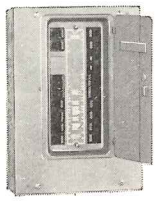
MAXIMUM NUMBER OF POLES					Mains Cap., Amp	COMB. FLUSH/SURFACE ENCLOSURES EXCEPT WHERE NOTED		RAINTIGHT ENCLOSURES		MAIN LUG ASS'Y		MAIN BREAKER	
Single Pole		2 Pole		3 Pole		Catalog Number	List Price	Cat. No.	List Price	Cat. No.	List Price	Cat. No.	List Price
NC ½"	NA 1"	NC 1"▲	NA 2"	3"									
Single Phase, 3-Wire SN, Insulated Neutral, 120/240 Volts, A.C.													
2	2	—	1	—	30	102-2 (surface) •	$ 3.30	RH102-2 •	$ 9.00	—	—	—	—
4	2	1	1	—	50	102-4S (surface) •	5.00	RH102-4 •	10.00	—	—	—	—
4	2	1	1	—	50	102-4F (flush) •	5.00	—	—	—	—	—	—
12	4	2	2	—	100	104-12F •	6.00	RH104-12 •	11.00	—	—	—	—
12	4	2	2	—	100	104-12S •	6.00	—	—	—	—	—	—
12	4	6	2	—	100	104-12-100 •	8.00	RH104-12-100 •	13.00	—	—	—	—
16	8	6	4	—	100	108-16 •	12.00	RH108-16 •	23.00	—	—	—	—
16	8	6	4	—	125	X108-16 •★	12.00	RHX108-16 •★	23.00	L125	$1.50	NB100	$20.50
24	12	10	6	—	125	X112-24 •★	17.00	RHX112-24 •★	27.00	L125	1.50	NB100	20.50
24	12	10	6	—	150	112-24-150 •	24.00	RH112-24-150 •	36.00	—	—	—	—
24	12	10	6	—	200	112-24-200 •	28.00	RH112-24-200 •	38.00	—	—	—	—
24	16	10	8	—	125	CX116-24 •★	23.00	RHCX116-24 •★	35.00	L125	1.50	NB100	20.50
30	20	14	10	—	150	C120-30 •	30.00	RHC120-30 •	42.00	—	—	—	—
—	—	—	1	—	200	10200 •‡	16.00	RH10200 •‡	47.00	—	—	—	—
40	24	18	12	—	200	C124-40 •	44.00	RHC124-40 •	56.00	—	—	—	—
40	28	18	14	—	200	C128-40	47.00	—	—	—	—	—	—
40	40	20	20	—	200	C140-40-200	68.00	—	—	—	—	—	—
42	40	20	20	—	400	140-42-400S (surface)	88.00	—	—	—	—	—	—
42	40	20	20	—	400	140-42-400F (flush)	88.00	—	—	—	—	—	—
Three Phase, 3 or 4-Wire, 240 Volts max.													
—	3	—	—	1	70	1370S (surface) •	9.00	RH1370 •	13.00	—	—	—	—
—	3	—	—	1	70	1370F (flush) •	9.00	—	—	—	—	—	—
—	—	—	—	1	100	13100 •	15.00	RH13100 •	20.00	—	—	—	—
24	12	10	6	4	100	312-24 •	28.00	RH312-24 •	40.00	—	—	—	—
36	18	16	8+	6	150	318-36 •	37.00	RH318-36 •	49.00	—	—	—	—
42	24	20	12	8	150	324-42	46.00	—	—	—	—	—	—
42	28	20	14	8+	150	328-42	57.00	—	—	—	—	—	—
42	28	20	14	8+	200	328-42-200S (surface)	60.00	—	—	—	—	—	—
42	28	20	14	8+	200	328-42-200F (flush)	60.00	—	—	—	—	—	—
42	40	20	20	12+	150	340-42-150	75.00	—	—	—	—	—	—
42	40	20	20	12+	200	340-42-200S (surface)	78.00	—	—	—	—	—	—
42	40	20	20	12+	200	340-42-200F (flush)	78.00	—	—	—	—	—	—
42	40	20	20	12+	400	340-42-400S (surface)	100.00	—	—	—	—	—	—
42	40	20	20	12+	400	340-42-400F (flush)	100.00	—	—	—	—	—	—

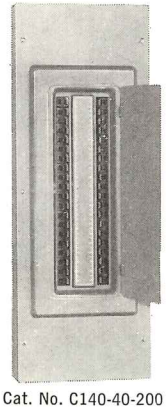
• Suitable for Service Entrance Equipment.
▲ NC, 1", 2 pole—40 amps maximum rating.
★ Supplied without main lugs.
‡ Enclosure for one Catalog No. 2B125, 2B150, 2B175 or 2B200 breaker only.
NOTE: All devices have lugs suitable for aluminum or copper except 102-2, 102-4 and 1370
NOTE: Suffix "NI" to indicate Class NI has been omitted from catalog numbers above to conserve space.

Cat. No. 104-12S


Cat. No. 108-16

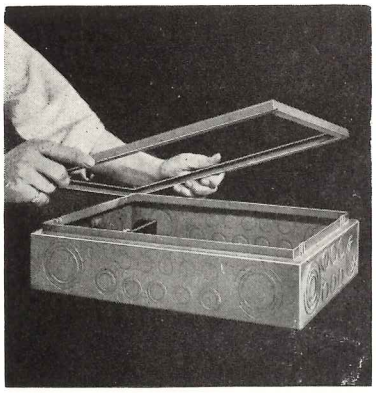

Cat. No. X112-24

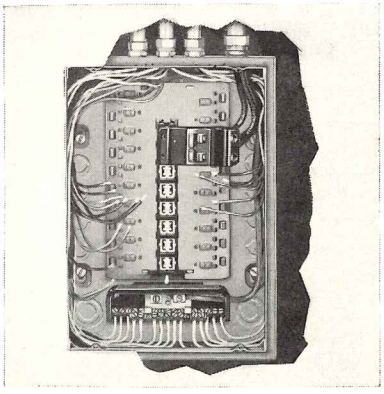

Cat. No. CX116-24

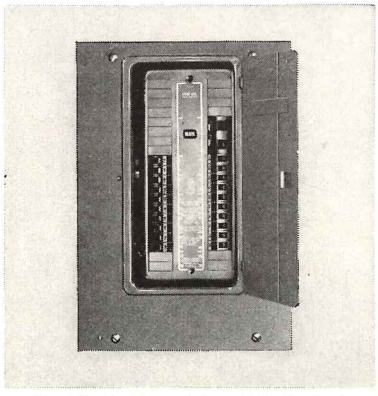

Cat. No. C140-40-200

Stock-reducing Combination Flush-Surface Enclosures

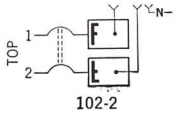
A Federal Pacific exclusive, combination flush-surface enclosures are ready for either type of installation. Enclosures are shipped ready for surface mounting. For flush mounting in plaster walls see steps below.


1.—Remove and discard picture-type frame. Mount box on studding and bring in wiring.

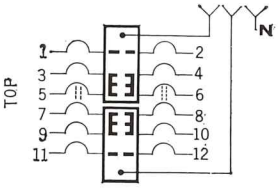

2.—Plaster around box, working into inset and flush with inner edge of the enclosure and connect leads.


3.—Attach trim and the job is finished.

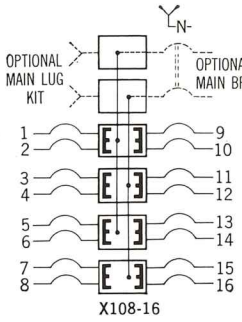
Single Phase Load Centers



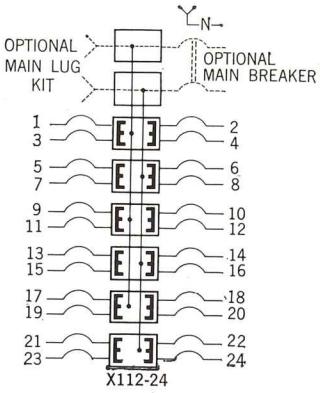
102-2



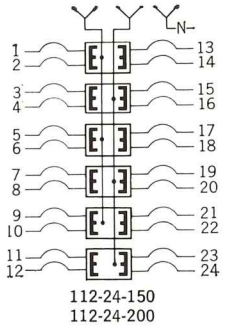
104-12



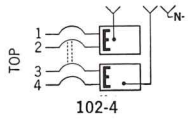
X108-16



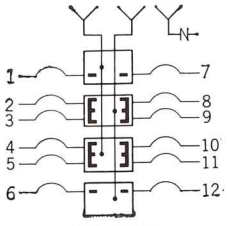
X112-24



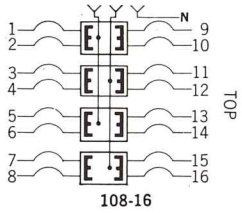
112-24-150
112-24-200



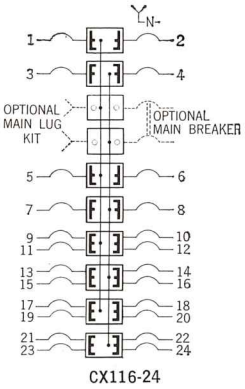
102-4



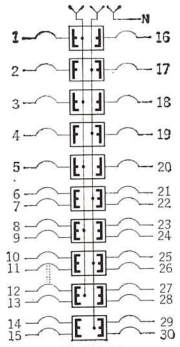
104-12-100



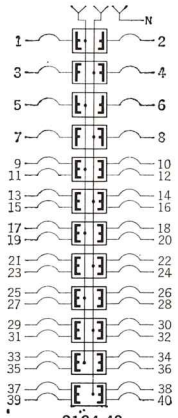
108-16



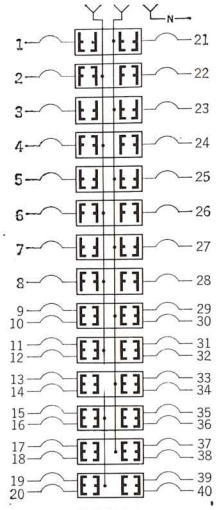
CX116-24



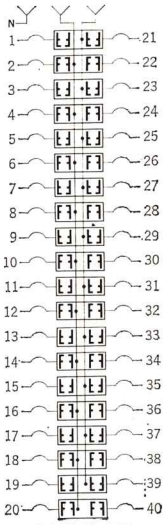
C120-30



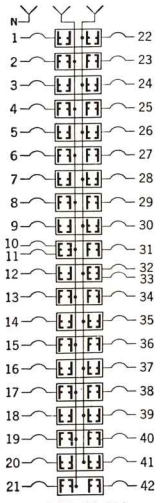
C124-40



C128-40

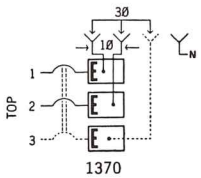


C140-40-200

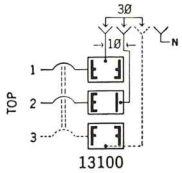


140-42-400

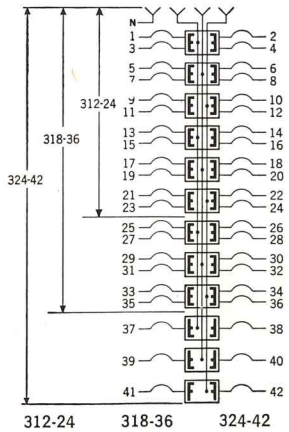
3 Phase 4 Wire Load Centers



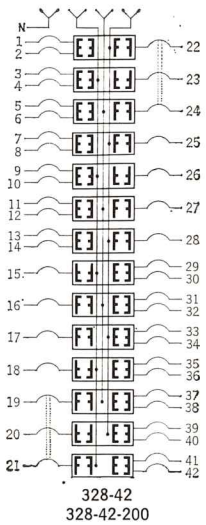
1370



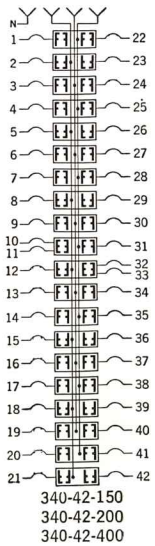
13100



312-24 318-36 324-42



328-42
328-42-200



340-42-150
340-42-200
340-42-400

Suffix "NI" to indicate class NI has been omitted from catalog numbers.

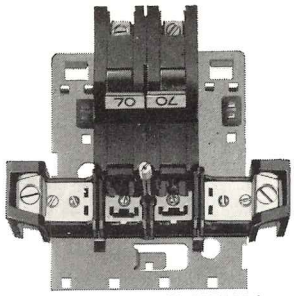
CLASS
1000 STAB-LOK® Circuit Breaker Load Centers

FPE

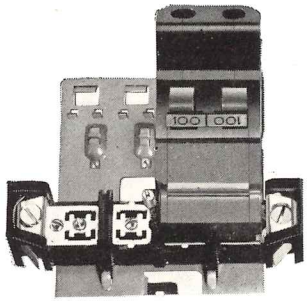
SUITABLE FOR SERVICE EQUIPMENT

Convert Load Centers into Main Disconnect Panels

MAXIMUM NUMBER OF POLES				Mains Capacity, Amps	Breaker Catalog Number	CATALOG NUMBER	
Single Pole		Two Pole				General Purpose Enclosures	Raintight Enclosures
NC ½"	NA 1"	NC 1"	NA 2"				
Using 2-pole stab-in breakers as a main—Stab-in breaker, connect line wires to breaker lugs.							
8	2	1	1	70	2P70	104-12	RH104-12
8	2	3	1	70	2P70	104-12-100	RH104-12-100
12	6	4	3	70	2P70	108-16	RH108-16
4	—	—	—	100	2P100	104-12	RH104-12
8	4	2	2	100	2P100	108-16	RH108-16
Using 2-pole 100 amp bolted breakers as main—Bolt breakers in space provided.							
16	8	6	4	100	NB100	X108-16	RHX108-16
20	12	10	6	100	NB100	X112-24	RHX112-24
20	16	10	8	100	NB100	CX116-24	RHCX116-24
Using 2-pole 200 amp frame size bolted breaker as main—Remove main lugs. Bolt breaker in place. Connect line wires to breaker lugs. See page 2.							
24	12	10	6	125	2B125	112-24-150	RH112-24-150
24	20	12	10	125	2B125	C120-30	RHC120-30
24	12	10	6	150	2B150	112-24-150	RH112-24-150
30	20	14	10	150	2B150	C120-30	RHC120-30
24	12	10	6	175	2B175	112-24-200	RH112-24-200
34	24	17	12	175	2B175	C124-40	RHC124-40
24	12	10	6	200	2B200	112-24-200	RH112-24-200
40	24	18	12	200	2B200	C124-40	RHC124-40



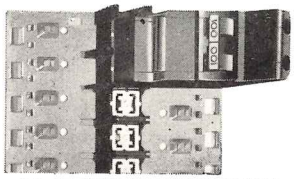
Cat. No. 104-12 with 2P70 Main



Cat. No. 108-16 with 2P100 Main

Load Center with Main Disconnect (Fusible)

MAXIMUM NUMBER OF POLES				Mains Capacity, Amps	COMBINATION FLUSH/SURFACE ENCLOSURE	
Single Pole		Two Pole			Catalog Number	List Price
NC ½"	NA 1"	NC 1"	NA 2"			
Single Phase, 3-Wire SN, Insulated Neutral, 120/240 Volts, A.C.						
40	24	18	12	200	F124-40 RHF124-40 (raintight)	**$80.00** **98.00**

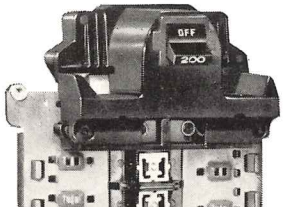


Cat. No. X112-24 with NB100 Main

Split Bus Panels**

Single Phase, 3-Wire SN, 120/240 Volts, A.C. **Ref. Par. 230-70(g), 1962 NEC**

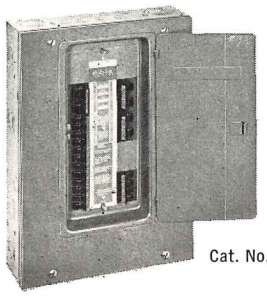
MAXIMUM NUMBER OF POLES				Mains Capacity, Amps	COMBINATION FLUSH/SURFACE ENCLOSURES		RAINTIGHT ENCLOSURES	
Main Section		Sub-section Factory Wired			Catalog Number	List Price Lighting main not included	Catalog Number	List Price Lighting main not included
USABLE 2 POLE Not including lighting main		**SINGLE POLE**						
NC 1"	NA 2"	NC ½"	NA 1"					
3	2	12	6	125	C1206-12-125	**$23.00**	RHC1206-12-125	**$33.00**
4	3	12	6	125	C1306-12-125	**26.00**	RHC1306-12-125	**38.00**
5	4	14	10	125	C1410-14-125	**35.00**	RHC1410-14-125	**47.00**
5	4	14	10	150	C1410-14-150	**37.00**	RHC1410-14-150	**50.00**
5	4	14	10	200	C1410-14-200	**39.00**	RHC1410-14-200	**57.00**
5	4	20	16	200	C1416-20-200*	**68.00**	RHC1416-20-200*	**90.00**
4	4	34	24	200	C1424-34-200	**60.00**	——	—

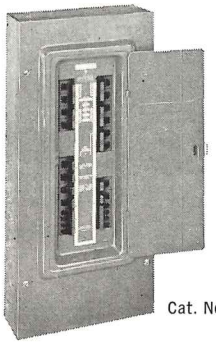


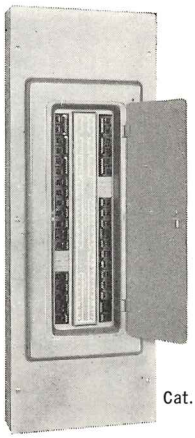
Cat. No. C124-40 with 2B200 Main

* Price includes one 100 ampere, 2-pole breaker (2P100).
** Main lugs are suitable for copper or aluminum conductors.

NOTES: Suffix "NI" to indicate class NI has been omitted from catalog numbers above to conserve space.


Cat. No. C1306-12-125

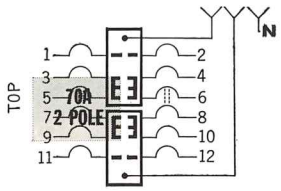

Cat. No. C1410-14-200


Cat. No. C1424-34-200

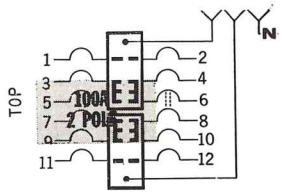
DISCOUNT SCHEDULE A

Load Centers With Field Installed Main Breakers

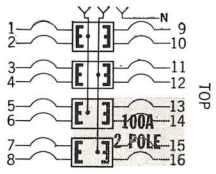
Using 100 amp Frame Type NA and Type NB as Main Breaker



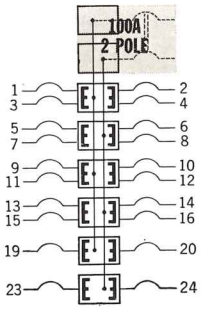
104-12
with 2P70 Bkr



104-12
with 2P100 Bkr

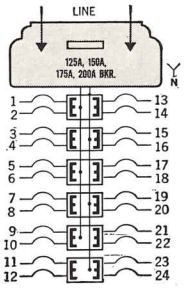


108-16
with 2P100 Bkr

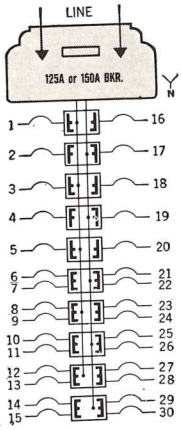


X112-24
with NB100 Bkr

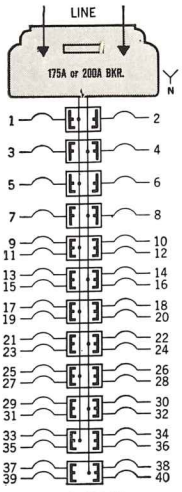
Using 2 Pole 125, 150, 175 or 200 amp Frame Size Breaker as Main



112-24-200
With either 125, 150,
or 200 amp breaker

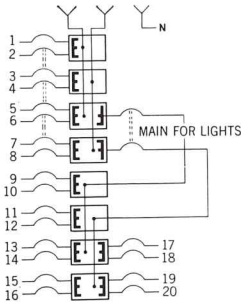


C120-30
With 125 or 150 amp breaker

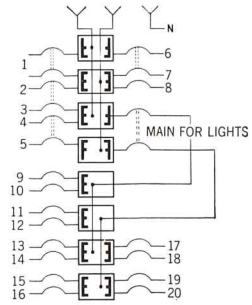


C124-40
With 175 or 200 amp breaker

Split Bus Panels



C1206-12-125



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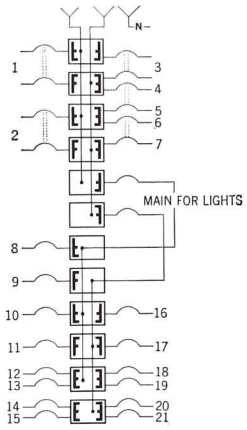

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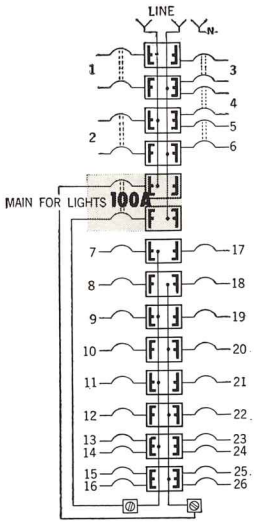
C1410-14-200



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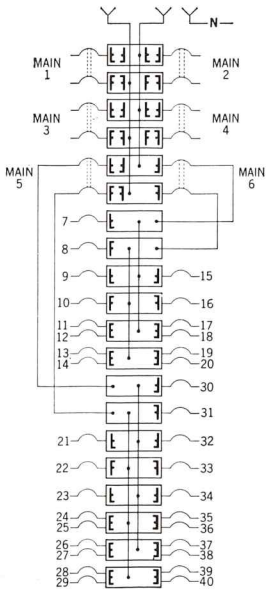
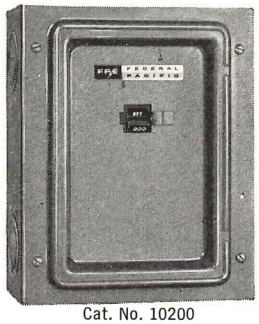


C1424-34-200

Suffix "NI" to indicate Class NI has been omitted from above catalog numbers.

2 and 3 Pole Breaker Enclosures Only** — Suitable for Service Equipment

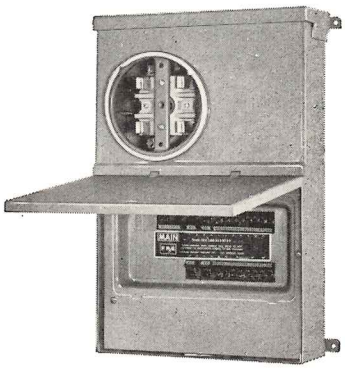
Main Capacity Amp	MAXIMUM RATING 2 Pole	MAXIMUM RATING 3 Pole	General Purpose Enclosures	List Price	Raintight Enclosures	List Price
Single Phase						
50	1-50 amp	—	102-4S (Surface) 102-4F (Flush)	$ 5.00	RH102-4	$10.00
100	1-70 amp or 1-100 amp	— —	104-12S (Surface) 104-12F (Flush)	6.00	RH104-12	11.00
200	1-125 amp or 1-150 amp or 1-175 amp or 1-200 amp	— — — —	10200 Combination Flush/Surface	16.00	RH10200	47.00
Three Phase						
70	—	1-70 amp	1370 (Surface) 1370 (Flush)	9.00	RH1370	13.00
100	—	1-100 amp	13100 Combination Flush/Surface	15.00	RH13100	20.00


Cat. No. 10200

Devices for Special Applications**

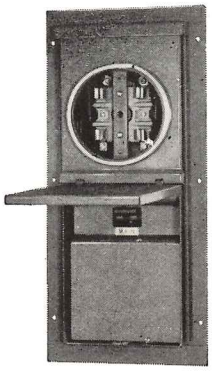
MAXIMUM NUMBER OF POLES Single Pole NC ½"	Single Pole NA 1"	Two Pole NC 1"▲	Two Pole NA 2"	Mains Capacity, Amps	Type of Enclosure	Catalog Number	List Price
SHALLOW DEPTH ENCLOSURES—2½" Deep—Single Phase, 3 Wire SN, 120/240 Volts, A.C.							
12	4	2	2	70	Flush	SB104-12-70	$ 6.00
12	4	2	2	100	Flush	SB104-12	6.00
RISER PANELS—Single Phase, 3 Wire SN, 120/240 Volts A.C.							
12	4	2	2	100	Flush	RB104-12	18.00
16	8	6	4	100	Flush	RB108-16	22.00
STAB-LOK REPLACEMENT COVER AND MOUNTING PLATE FOR MULTI-BREAKER							
8	8	4	4	70	Flush	3MBAF	21.80†
8	8	4	4	70	Surface	3MBAS	21.80†

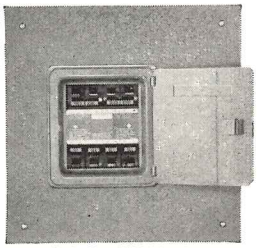
† Price includes four single pole breakers.


Cat. No. MB112-20S

Meter Socket Combinations — Suitable for Service Entrance Equipment**

PROVISION FOR BRANCH CIRCUITS Single Pole NC ½"	Single Pole NA 1"	Two Pole NC 1"▲	Two Pole NA 2"	Bus Capacity or Main Breaker Rating	Surface Enclosure† Catalog Number	Semi-flush★ Enclosure Catalog Number	List Price
LOAD CENTERS—Single Phase, 3 Wire SN, 120/240 Volts A.C.							
16	8	6	4	125	ML108-16S	ML108-16SF	$ 31.00
24	12	10	6	125	ML112-24S	ML112-24SF	36.00
24	12	10	6	200	ML112-24-200S	ML112-24-200SF	71.00
CIRCUIT BREAKER MAIN DISCONNECTS—Single Phase, 3 Wire SN, 120/240 Volts A.C.‡							
—	—	—	—	100	MB100S	MB100SF	42.50
—	—	—	—	200*	MB200S	MB200SF	142.00
12	6	4	3	50●	MB106-12S	MB106-12SF	41.00
16	8	6	4	100	MB108-16S	MB108-16SF	54.00
20	12	10	6	100	MB112-20S	MB112-20SF	56.00
20	14	10	7	100	MB114-20S	MB114-20SF	60.00
24	12	10	6	125	MB112-24S	MB112-24SF	150.00
30	20	14	10	150	MB120-30S	MB120-30SF	170.00
34	24	16	12	175	MB124-34S	MB124-34SF	180.00
40	24	18	12	200	MB124-40S	MB124-40SF	188.00


Cat. No. MB100SF

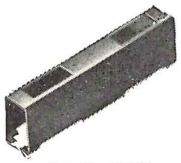

Cat. No. RB108-16

● Bus rating 70 amps.
* Also available in 125, 150, and 175 amp ratings.
** Suffix "NI" to indicate class NI has been omitted from catalog numbers above to conserve space.
‡ Price includes main breaker only, no branches.
▲ 2 pole NC, 40 amps maximum rating.
† Surface enclosures have provisions for interchangeable hub.
★ Semi-flush enclosures have 1½" K.O. top, except 200 amp which has 2" K.O. top.

Cat. No. FS

Cat. No. HENA

Cat. No. HTNC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Cat. No. NCFS

Cat. No. TLOK

Cat. No. 1LOK

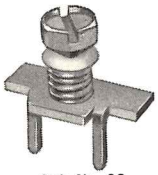
Cat. No. CLOK

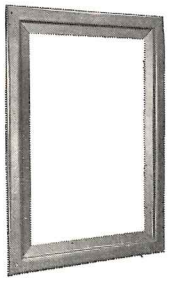
Cat. No. 2LOK

Cat. No. NIT

Cat. No. 3LOK

Cat. No. LB-108


Cat. No. SC


Cat. No. SFA811

Accessories for "Bold New Look" Breakers

Catalog Number	Description	Std. Package	List Price Each
FS	Knockout Filler, 1"	50	$ .30
HENA	Handle extensions for 1 pole NA breaker	50	.10*
HTNA	Handle ties for 1 pole NA breaker	50	.10*
HTNC	Handle ties for 1 pole NC breaker	50	.10*
LB-108	Main lug blocking screw for 100 amp enclosures	50	.20
NCFS	Knockout Filler, ½"	50	.30
NIS	Non-interchangeable screw removal tool	1	.25
NIT	Non-interchangeable K.O. tool	1	.25
SC	Slot closer for "E" or "F" slots	50	.20
TLOK	Lock for Trim Door	10	4.40
CLOK	Handle lock-off for 2 pole NC or 2P100 (provision for padlock)	50	.70
1LOK	Handle lock-off for 1 pole NC and NA breakers (no provision for padlock)	50	.70
2LOK	Lock for 2-pole Stab-lok Circuit Breaker, 15-70 amps (provision for padlock)	50	.70
3LOK	Lock for 3-pole Stab-lok Circuit Breaker, 15-70 amps (provision for padlock)	50	.70
3-100LOK	Lock for 3-pole Stab-lok Circuit Breaker, 90 or 100 amps (provision for padlock)	5	.70

* No charge when ordered with circuit breakers.

Adapter Frames for extra flush overhang

Catalog Number	For Device Catalog Number	STANDARD PACKAGE	
		Number	Approx. Weight
SFA811	13100	10	8 lbs.
SFA911	108-16, X108-16, 104-12-100	10	9 lbs.
SFA1114	10200	10	12 lbs.
SFA1116	X112-24, CX116-24, C1206-12-125, C1306-12-125	10	12 lbs.
SFA1117	312-24	10	12 lbs.
SFA1118	112-24-150, 112-24-200	10	12 lbs.
SFA1124	C120-30, C124-40, 318-36, 324-42, C1410-14-125, C1410-14-150, C1410-14-200	10	14 lbs.
SFA1430	C128-40, 328-42, C1416-20-200	10	18 lbs.
SFA1440	C140-40-200, 340-42-150	10	18 lbs.

Interchangeable Hubs—All devices through 200 amps

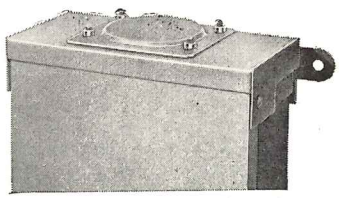
All Stab-lok raintight devices with provisions for interchangeable hubs are cataloged with prefix "RH".

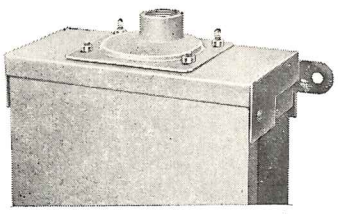
The Federal Pacific development of interchangeable hubs for raintight enclosures besides minimizing stocks affords greater flexibility of hub selection and offers the only hub that provides selection of location for easy conduit alignment. Any Federal Pacific raintight device is adaptable for connection to conduit through choice of hubs of ¾", 1", 1¼", 1½", 2" or 2½".

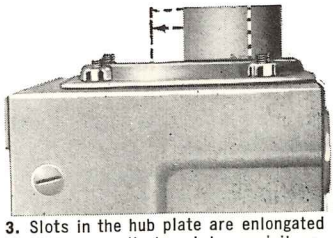
Slots in the hub plate permit ready adjustability to the conduit location. A simple reverse of hub plate on the studs provides further alignment flexibility from the front to front-center of the enclosure. This adjustability saves installation time and cost by eliminating the necessity for conduit offset or offset nipple fitting to join the enclosure with the conduit or other device.

Coupling this unique hub development with the exclusive mounting-ear arrangement and locked "cover open" position, makes the Federal Pacific raintight devices by far the easiest and most economical to install.

Hub Cat. No.	List Price	Description	Packaging
HC	$ .25	Hub closing plate	
H75	2.60	¾" conduit opening	10
H100	2.60	1" conduit opening	to
H125	2.60	1¼" conduit opening	a
H150	2.60	1½" conduit opening	carton
H200	4.40	2" conduit opening	
H250	7.80	2½" conduit opening	


1. Standard "RH" raintight enclosure for application where no raintight hub is required.


2. For an application which requires a raintight hub, replace blank plate with an interchangeable hub of the proper size.


3. Slots in the hub plate are enlongated to permit adjustment to conduit position. Hub plate can also be reversed for forward hub location.

STAB-LOK® Circuit Breaker Dimensions and Knockouts

General Purpose Enclosure Dimensions

Catalog No.*	Height	Width	Depth	Standard Package, lbs.
3MBA	—	—	—	8 (2 per carton)
102-2	5⅞"	3¾"	2⅜"	20 (10 per carton)
102-4	7⅝"	4⅝"	2½"	32 (10 per carton)
104-12	11¼"	7⅜"	2¾"	7
104-12-100	11¼"	8⅞"	3⅝"	9
108-16	11¼"	8⅞"	3⅝"	9
X108-16	11¼"	8⅞"	3⅝"	9
X112-24	15¾"	11¼"	3⅝"	16
112-24-200	17⅜"	11¼"	3⅞"	22
CX116-24	15¾"	11¼"	3⅝"	16
C120-30	23⅞"	11⅜"	3⅞"	23
C124-40	23⅞"	11⅜"	3⅞"	23
C128-40	30"	14"	3⅞"	52
C140-40-200	40"	14"	3⅞"	66
140-42-400	40"	16"	5¾"	77
312-24	17⅜"	11¼"	3⅞"	21
318-36	23⅞"	11⅜"	3⅞"	26
324-42	23⅞"	11⅜"	3⅞"	28
328-42	30"	14"	3⅞"	54
328-42-200	30"	16"	4¾"	56
340-42-150	40"	14"	3⅞"	68
340-42-200	40"	16"	4¾"	77
340-42-400	40"	16"	5¾"	83
C1206-12-125	15¾"	11¼"	3⅝"	16
C1306-12-125	15¾"	11¼"	3⅝"	16
1370	9⅜"	6⅜"	3⅜"	6
C1410-14-125	23⅞"	11⅜"	3⅞"	22
C1410-14-150	23⅞"	11⅜"	3⅞"	22
C1410-14-200	23⅞"	11⅜"	3⅞"	22
C1416-20-200	30"	14"	3⅞"	40
C1424-34-200	40"	14"	3⅞"	64
10200	13¾"	11¼"	4⅝"	14
13100	11¼"	7⅞"	3¾"	8

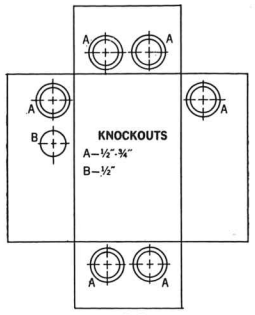
Raintight Enclosure Dimensions

Catalog No.*	Height	Width	Depth	Standard Package, lbs.
RH102-2	7⅞"	5⅝"	3⅝"	64 (10 per carton)
RH102-4	9⅛"	5⅝"	3⅝"	64 (10 per carton)
RH104-12	12⅝"	7¼"	4¼"	10
RH104-12-100	13⅞"	8¼"	4¼"	11
RH108-16	13⅞"	8¼"	4¼"	12
RHX108-16	13⅞"	9¼"	4¼"	12
RHX112-24	19⅝"	11¾"	4¹⁄₁₆"	22
RH112-24-200	23⅛"	11¾"	4⅞"	30
RHCX116-24	19⅝"	11¾"	4¹⁄₁₆"	23
RHC120-30	24¹⁄₁₆"	11¾"	4⅞"	31
RHC124-40	24¹⁄₁₆"	11¾"	4⅞"	33
RH312-24	24¹⁄₁₆"	11¾"	4⅞"	30
RH318-36	24¹⁄₁₆"	11¾"	4⅞"	33
RHC1206-12-125	19⅝"	11¾"	4¹⁄₁₆"	23
RHC1306-12-125	19⅝"	11¾"	4¹⁄₁₆"	23
RH1370	13⅞"	8¼"	4¼"	12
RHC1410-14-125	24¹⁄₁₆"	11¾"	4⅞"	28
RHC1410-14-150	24¹⁄₁₆"	11¾"	4⅞"	28
RHC1410-14-200	24¹⁄₁₆"	11¾"	4⅞"	28
RHC1416-20-200	32⅛"	14"	4¾"	40
RH10200	13⅞"	11⅜"	5⅛"	16
RH13100	13⅞"	8¼"	4¼"	11

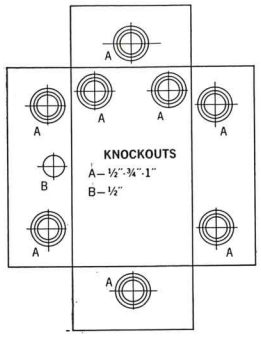
* Suffix NI to indicate Class NI has been omitted from catalog numbers above to conserve space.

Standard Package Quantity, Weights of Circuit Breakers

Description	No. Per Package	Weight, lbs.
Stab-in Main and Branch Circuit Breakers		
1 Pole, NC, ½"	60	12
1 Pole, NA, 1"	60	18
2 Pole, NC, 1"	30	13
2 Pole, NA, 2", to 70A	30	19
2 Pole NA, 2", 100A	24	16
2 Pole Water Heater	30	19
2 Pole, Type N Switch, Neut.	30	19
3 Pole, NA, to 70A	12	16
3 Pole, NA, 100A	6	9
3 Pole, NA, Delta	6	8
Bolted-on Main Breakers for Field Installation		
NB100	24	16
Type 2B Breakers, 125-200A	4	10



102-2



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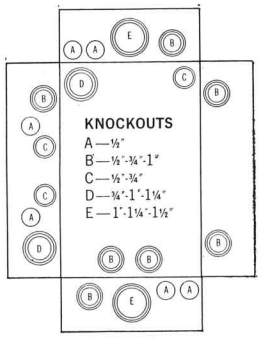

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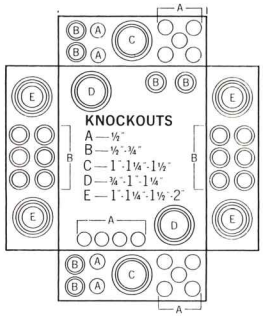
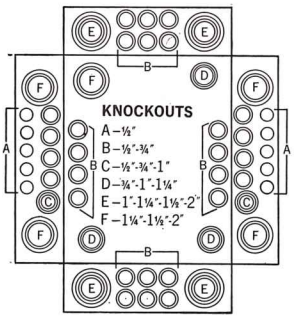
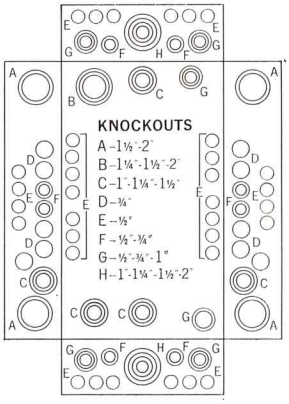


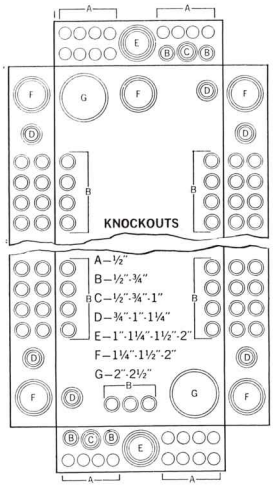
108-16, X108-16, 104-12-100



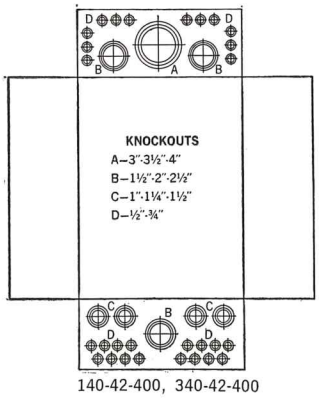
X112-24, CX116-24, C1206-12-125, C1306-12-125



C120-30, C124-40, C1410-14-125, C1410-14-150, C1410-14-200

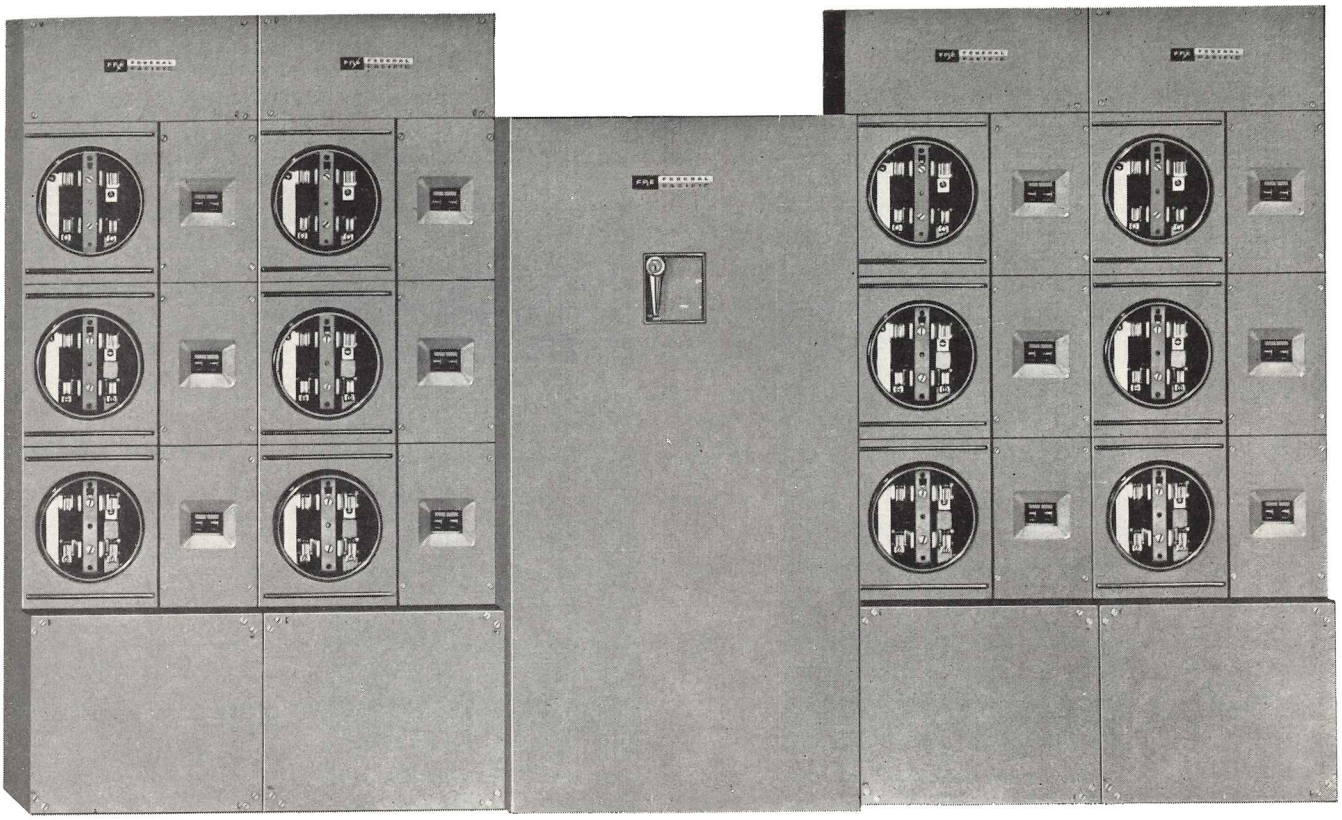


C128-40, 328-42, C1416-20-200, C1424-34-200, C140-40-200, 340-42-150



140-42-400, 340-42-400

Dimensions and Knockouts subject to change without notice.
Consult Factory for KO information on other enclosures



Stab-lok Meter Socket Combination Panels

Standardized Stab-lok Type "MS" Vertical Assemblies Reduce Installation Costs

Federal Pacific—always dedicated to reducing your installation costs—has designed a line of standardized, factory-assembled meter socket sections which include from two to six sockets per section. Assemblies may be used individually or bolted together for larger installations.

Assembled vertical sections include large line and load troughs, complete bussing, connections to breaker mounting, 500MCM main lay-in lugs, and from two to six meter socket openings depending on job requirements. All of these components are factory-assembled into a complete vertical section, ready for fastening to the wall.

The easy mobility of the single vertical assemblies eliminates the labor costs and handling problems associated with installing large, completely prefabricated units.

LOWER INSTALLATION COSTS

There is no on-the-job labor required to assemble a vertical section. All vertical sections can be quickly bolted together and connected to the new circuit breaker main disconnect. By removing the adjacent line-gutter side plates on meter socket assemblies and on the main breaker, one continuous gutter is formed for the connecting wires.

Line gutter knockouts on each assembly line up with knockouts on circuit breaker disconnects and with those on 400 and 600 amp. Type A-plus Safety Switch disconnects.

Line connections are easily made in the accessible bottom line gutter of each unit. Lugs are of the "lay-in" type so that the center of a wire may be skinned and laid in, enabling only one cable to feed through to several assemblies.

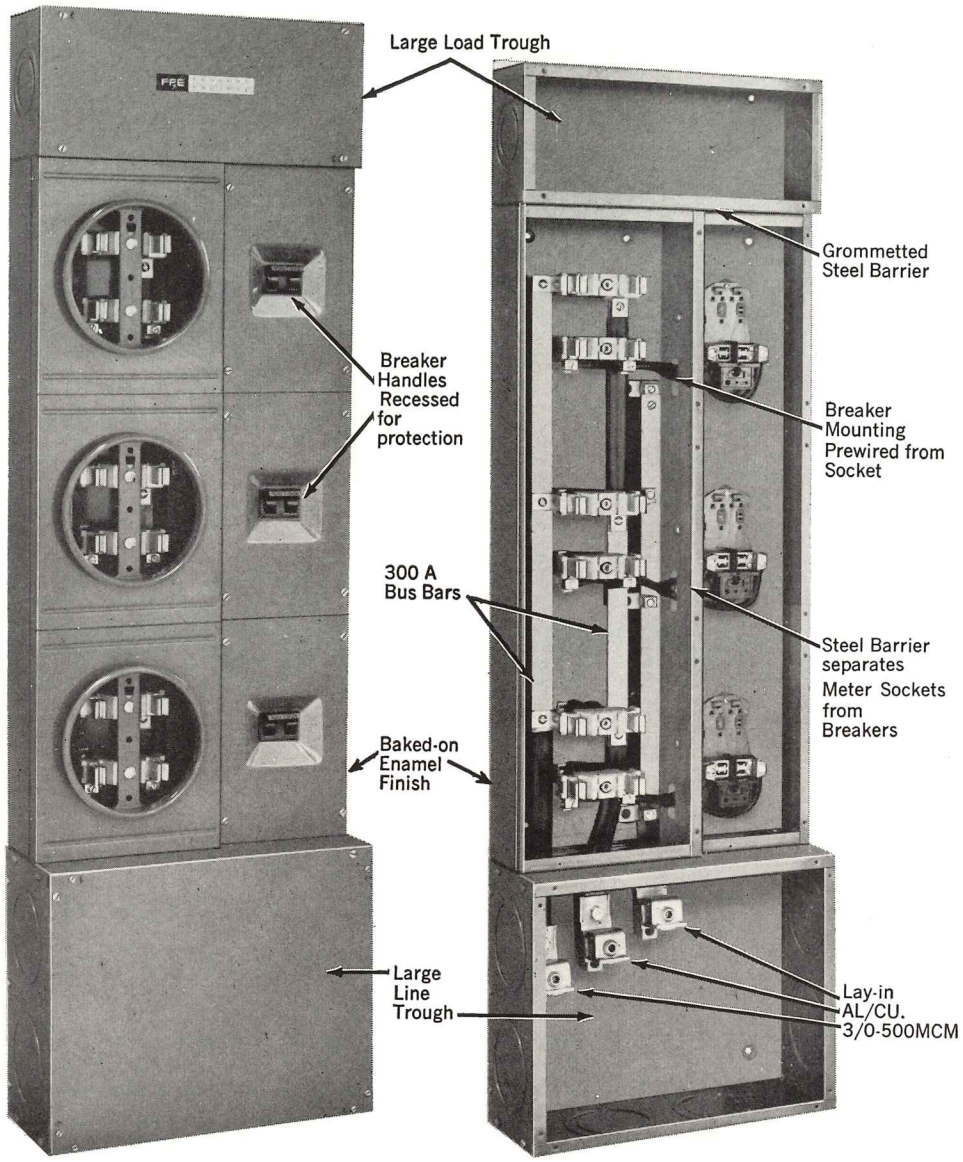
Minimum wiring costs: The only wiring a contractor does is to tie the service cable or cable from the main disconnect to the main lugs and connect the branch circuit wires to the breakers which are stabbed into the breaker mounting.

Copper/aluminum lugs: Lugs are suitable for copper or aluminum conductors.

No extra gutters required: Necessary line and load gutters are pre-assembled to each unit.

Flexibility of tenant main disconnect: All units are listed for breakers up to 100 amperes. Therefore, an apartment main breaker may be installed as 50 or 60 amperes and later, with the necessary changes in circuit wiring, may be increased to 100 amperes without requiring a new meter panel or any modification.

Stab-lok Type "MS" Meter Socket Combination Panels


Large Load Trough
Grommetted Steel Barrier
Breaker Handles Recessed for protection
Breaker Mounting Prewired from Socket
300 A Bus Bars
Steel Barrier separates Meter Sockets from Breakers
Baked-on Enamel Finish
Large Line Trough
Lay-in AL/CU. 3/0-500MCM

DESIGNED FOR UTILITY APPROVAL

Federal Pacific Meter Socket Assemblies include all the features specified by most leading utilities.

100% sealable: Each access plate, cover, or door to unmetered connections is sealable in at least two places.

Tamper-proof: A steel barrier between unmetered socket section and metered breaker mounting section prevents tampering.

Heavy capacity: Bus bars are full 300 ampere capacity (except 2 station, which is 200 amperes).

Convenient lock-off device: If desired to lock-off any tenant's main breaker, Federal Pacific can supply an accessory with which a breaker handle can be padlocked, Catalog No. CLOK.

U.L. listed: Federal Pacific Meter Socket Assemblies are listed with Underwriters' Laboratories, Inc. as panel base assemblies suitable for use as service equipment. Neutral bus is insulated and groundable.

Automatic alignment of meter: Cross-bar type of socket insures that the jaws are centered in the socket ring. Covers are positioned by the jaw blocks themselves.

10" centers: All sockets are on the preferred 10" center-to-center spacing.

Stab-lok circuit breakers: Each meter services one two-pole Stab-lok® Type NA Circuit Breaker, from 15 to 100 amperes.

Fifth terminal: Provision exists on each socket for fifth terminals when required for network installations.

GANGING VERTICAL ASSEMBLIES

The labor involved in mounting and combining vertical Federal Pacific Meter Socket Assemblies is negligible:

1. Adjacent side plates of line gutters are removed from assemblies to be ganged.
2. The individual vertical socket assemblies are bolted to the wall and may be bolted together with ¼" bolts using knockouts provided for this purpose.
3. The main cable (or cables) from the service or main disconnect is laid through the line gutter and into the main "lay-in" lugs of each unit.
4. Plug-in tenant main breakers in any rating from 15 through 100 amperes.
5. The complete assembly is now ready for load wiring.

MANUAL BY-PASS KIT

Any station of a standard Federal Pacific Meter Socket Assembly without by-pass may be converted in the field to a manual by-pass station by use of a "by-pass kit." Use of this kit provides these distinct advantages:

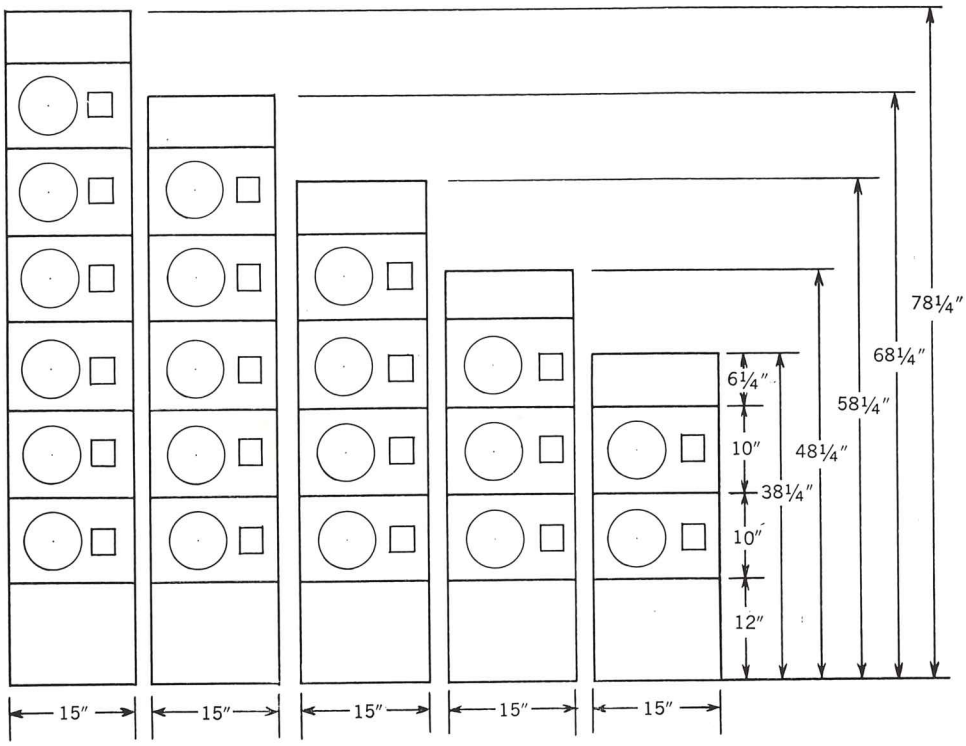
1. Conversion does not involve disturbing the line blocks or jaws.
2. The manual by-pass can be operated (after removal of the sealing ring) without partially withdrawing the meter.
3. A positive manual motion reopens the by-pass without relying upon spring action.
4. The by-pass must be opened before meter can be re-sealed in position.

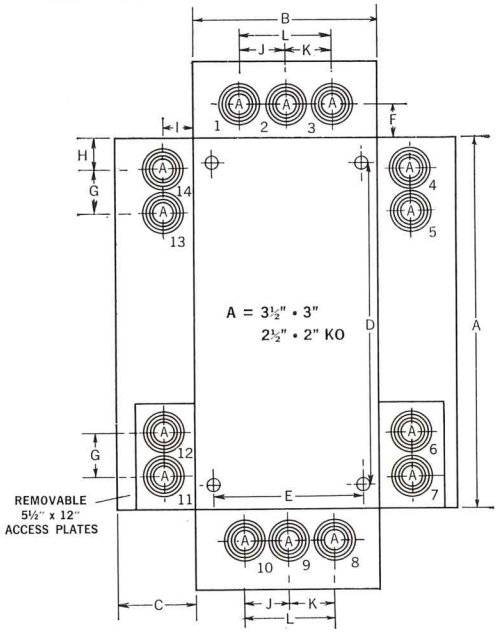
PRICING DATA

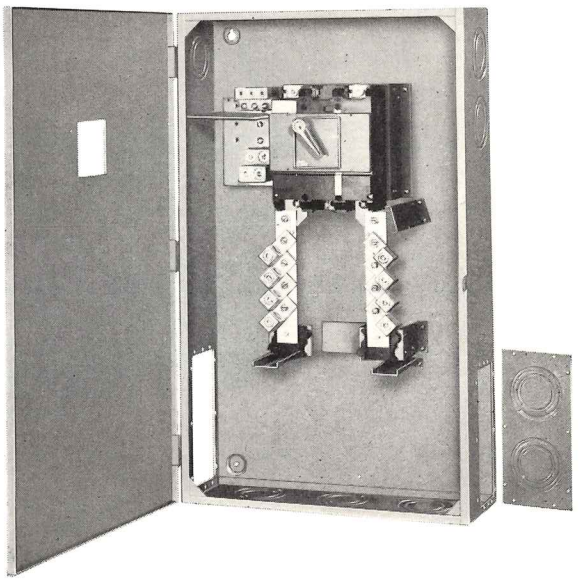
Description			Catalog No.	List Price
Meter Socket Assemblies (Circuit Breakers not included)				
2 station socket/breaker assembly	Note: All standard assemblies supplied with line gutter at bottom. For top line gutter refer to factory.		S2-100-2B	$ 78.00
3 station socket/breaker assembly			S3-100-3B	102.00
4 station socket/breaker assembly			S4-100-3B	127.00
5 station socket/breaker assembly			S5-100-3B	150.00
6 station socket/breaker assembly			S6-100-3B	175.00
Tenant Main Breakers				
60 Amp 2 Pole Common Trip Breaker‡			2P60NI	6.90
70 Amp 2 Pole Common Trip Breaker			2P70NI	13.00
100 Amp 2 Pole Common Trip Breaker			2P100NI	17.60
Enclosed Main Disconnect Circuit Breakers with Multiple Load Terminals (Suitable for use as Service Equipment)				
Trip Rating in Amperes	TERMINALS PER POLE Line	Load	Catalog No.	List Price
Single Phase, 3 Wire, 120/240V., A.C. (2 poles plus neutral)				
200	1—350MCM	2—3/0-500MCM	S-1200-MCB-2	160.00
400	2—250MCM or 1—500MCM	4—3/0-500MCM	S-1400-MCB-4	250.00
600	2—#3/0-500MCM	4—3/0-500MCM	S-1600-MCB-4	440.00
800	3—#3/0-350MCM or 2—#3/0-500MCM	6—3/0-500MCM	S-1800-MCB-6	700.00
Three Phase, 4 Wire, 120/208V., A.C. (3 poles plus neutral)				
200	1—350MCM	2—3/0-500MCM	S-3200-MCB-2	200.00
400	2—250MCM or 1—500MCM	4—3/0-500MCM	S-3400-MCB-4	300.00
600	2—#3/0-500MCM	4—3/0-500MCM	S-3600-MCB-4	520.00
800	3—#3/0-350MCM or 2—#3/0-500MCM	6—3/0-500MCM	S-3800-MCB-6	1250.00
Safety Switch Main Disconnects (Suitable for Use as Service Equipment) (Fuses not included)				
Description		Lug Size	Catalog No.	List Price
400 Amp 1 Phase A-Plus Safety Switch Disconnect		1 #4-500MCM plus 1 #6-250MCM	Q1422SN	219.00
600 Amp 1 Phase A-Plus Safety Switch Disconnect		2 #4-500MCM	Q1722SN	411.00
800 Amp 1 Phase A-Plus Safety Switch Disconnect		3 #4-500MCM	Q1822SN	647.00
400 Amp 3 Phase A-Plus Safety Switch Disconnect		1 #4-500MCM plus 1 #6-250MCM	Q1432SN	268.00
600 Amp 3 Phase A-Plus Safety Switch Disconnect		2 #4-500MCM	Q1732SN	464.00
800 Amp 3 Phase A-Plus Safety Switch Disconnect		3 #4-500MCM	Q1832SN	861.00
Accessories				
5th Terminal Assembly			S-5T	1.50
Jumpers (2 per socket required) each			S-SJ100	1.30
Manual By-pass Kit			S-TCK-2	11.00*
Glass Socket Covers for Unused Sockets			S-GC	.70
Handle Lock-Off for 15 through 70 amp Circuit Breakers			2LOK	.70
Handle Lock-Off for 100 amp Circuit Breaker			CLOK	.70
Line Gutter Extension—5" wide			S-LGE-5	6.00
Line Gutter Extension—15" wide			S-LGE-15	15.00

* Where required for field mounting.
‡ 15 through 50 amperes at same price.

Dimensions of Vertical Assemblies





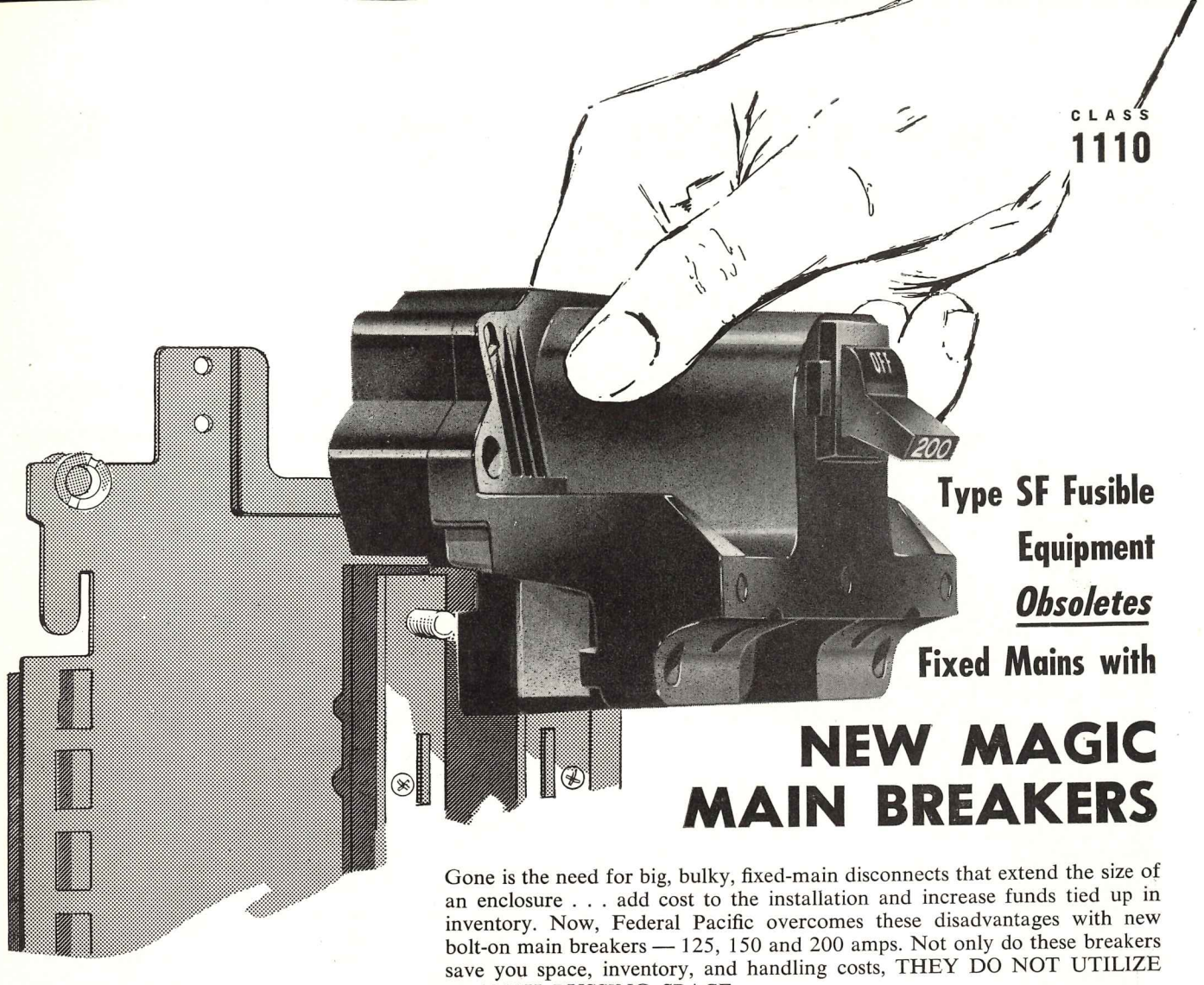


Circuit Breaker Disconnect

Approximate Dimensions and Knockout Locations of Main Disconnect Circuit Breakers, Inches*

Amp Rating	Dimensions—Inches												Knockouts — A=3½", 3", 2½", 2"												
	A	B	C	D	E	F	G	H	I	J	K	L	1	2	3	4	5	6	7	8	9	10	11	12	13	14
200, 400	40¼	22⅜	7⅞	36⅞	18½	3	5½	3⅝	3	7	7	14	A	A	A	A	A	A	A	A	A	A	A	A	–	A
600, 800	49¼	26⅜	9⅜	45	22	3	5½	3⅛	2⅞	7	7	14	A	A	A	A	A	A	A	A	A	A	A	A	A	A

* Subject to change without notice.



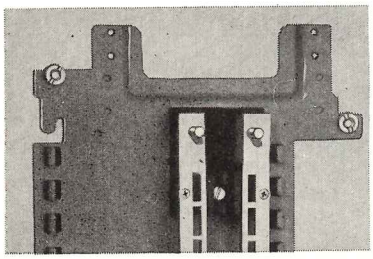
Type SF Fusible Equipment *Obsoletes* Fixed Mains with NEW MAGIC MAIN BREAKERS

Gone is the need for big, bulky, fixed-main disconnects that extend the size of an enclosure . . . add cost to the installation and increase funds tied up in inventory. Now, Federal Pacific overcomes these disadvantages with new bolt-on main breakers — 125, 150 and 200 amps. Not only do these breakers save you space, inventory, and handling costs, THEY DO NOT UTILIZE BRANCH BUSSING SPACE.

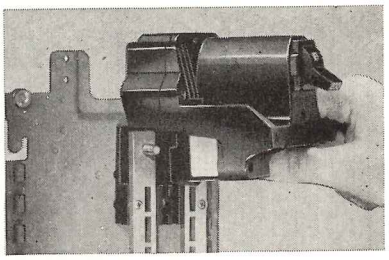
New enclosures with maximum of 16, 22, 32, or 40 plug fuse branches have been designed to accept main lug assemblies as well as main breakers. (see Convertible Mains Enclosures, page 21)

BY USING BOLT-ON BREAKERS

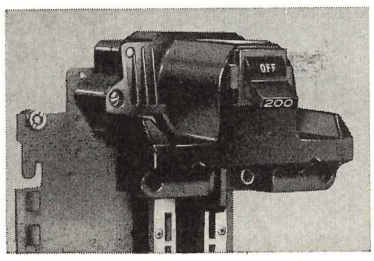
- You save on inventory. High-priced fixed main disconnect panels can now be completely eliminated from stock. Any of the new enclosures can be used for main breaker or main lug installation.
- You save space on the shelf and on the job. Each panel is more compact and several pounds lighter—easier to stock, less costly to install.
- You save on initial enclosure costs because the new main takes no branch bussing space.



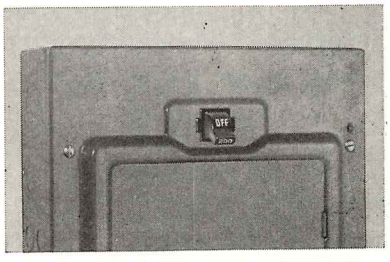
1. Enclosure with main studs ready to receive main breaker or main lug assembly.



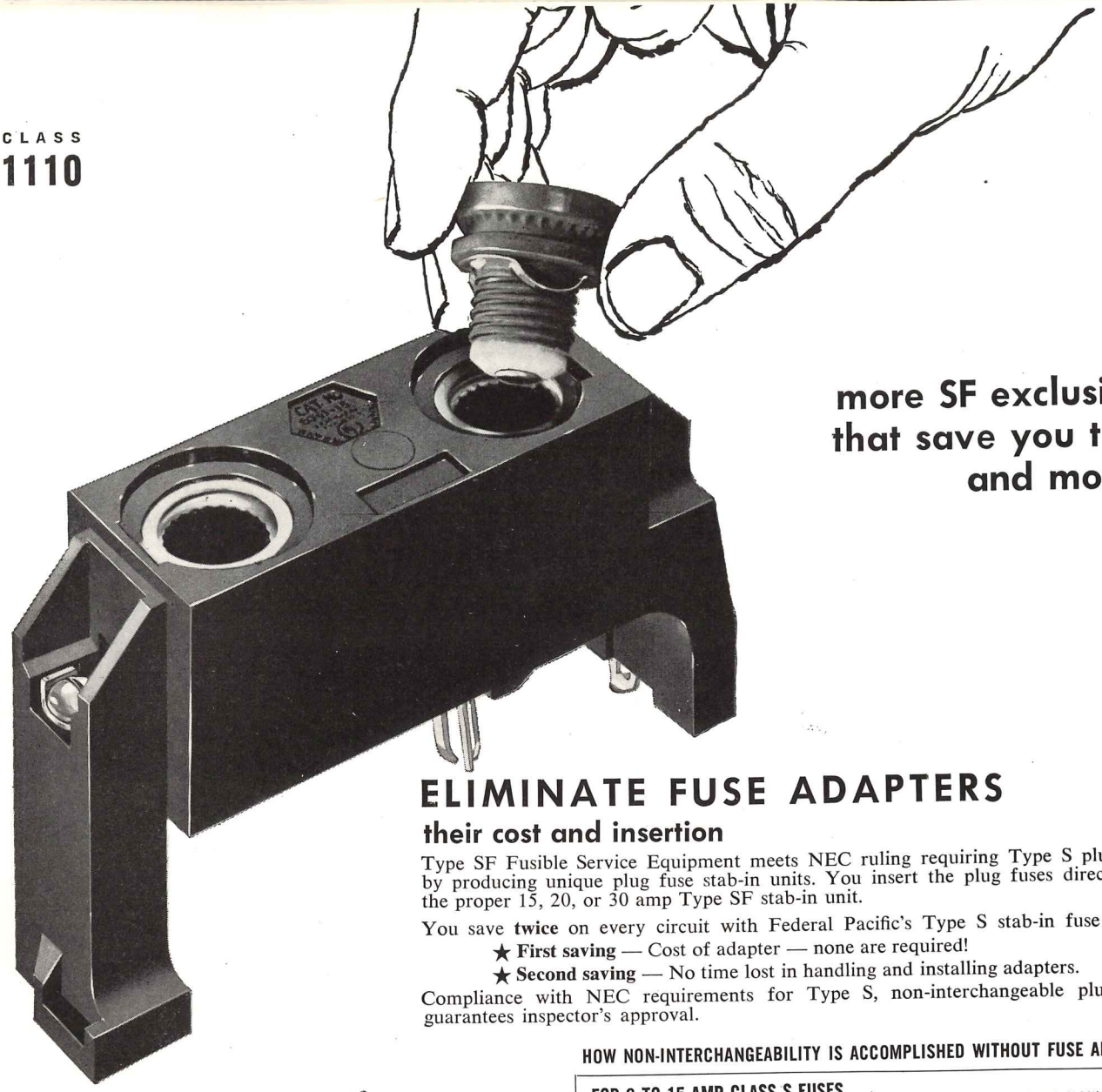
2. Main breaker slides over studs. Phenolic barrier guides breaker into final position.



3. Breaker in place after tightening stud nuts. Two screws in breaker hold it mechanically to back pan.



4. Knockout in trim accommodates main breaker handle. Main ratings are 125, 150, and 200 amperes.



more SF exclusives that save you time and money

ELIMINATE FUSE ADAPTERS

their cost and insertion

Type SF Fusible Service Equipment meets NEC ruling requiring Type S plug fuses by producing unique plug fuse stab-in units. You insert the plug fuses directly into the proper 15, 20, or 30 amp Type SF stab-in unit.

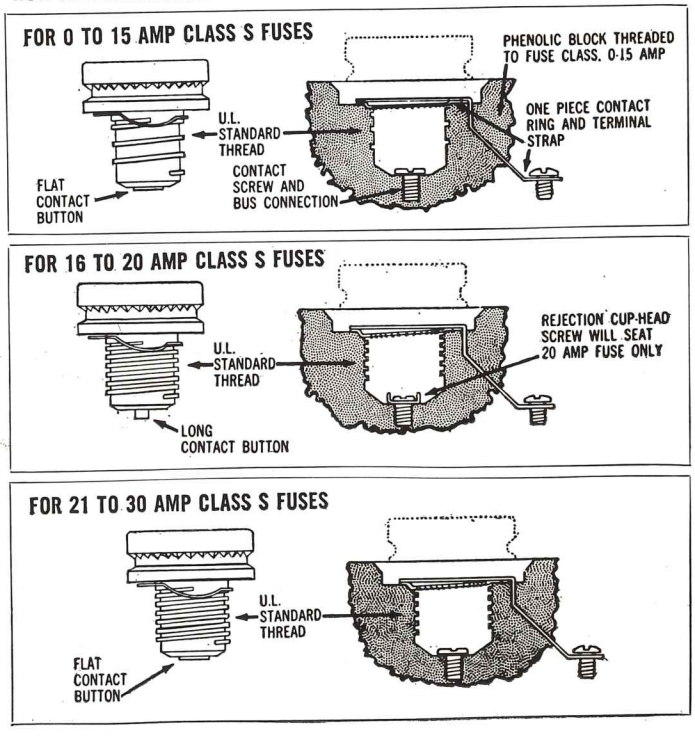
You save **twice** on every circuit with Federal Pacific's Type S stab-in fuse blocks.

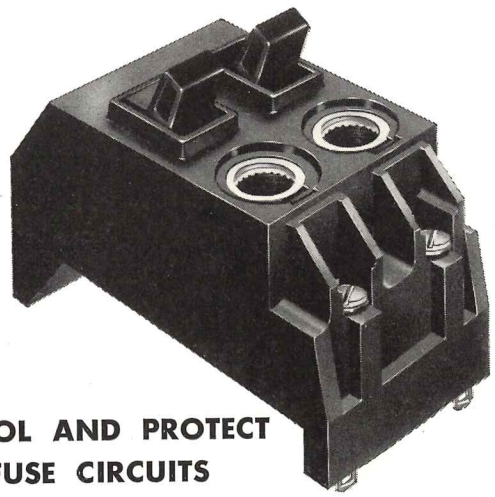
★ **First saving** — Cost of adapter — none are required!

★ **Second saving** — No time lost in handling and installing adapters.

Compliance with NEC requirements for Type S, non-interchangeable plug fuses guarantees inspector's approval.

HOW NON-INTERCHANGEABILITY IS ACCOMPLISHED WITHOUT FUSE ADAPTERS


FOR 0 TO 15 AMP CLASS S FUSES
PHENOLIC BLOCK THREADED TO FUSE CLASS. 0-15 AMP
ONE PIECE CONTACT RING AND TERMINAL STRAP
U.L. STANDARD THREAD
CONTACT SCREW AND BUS CONNECTION
FLAT CONTACT BUTTON
FOR 16 TO 20 AMP CLASS S FUSES
REJECTION CUP-HEAD SCREW WILL SEAT 20 AMP FUSE ONLY
U.L. STANDARD THREAD
LONG CONTACT BUTTON
FOR 21 TO 30 AMP CLASS S FUSES
U.L. STANDARD THREAD
FLAT CONTACT BUTTON



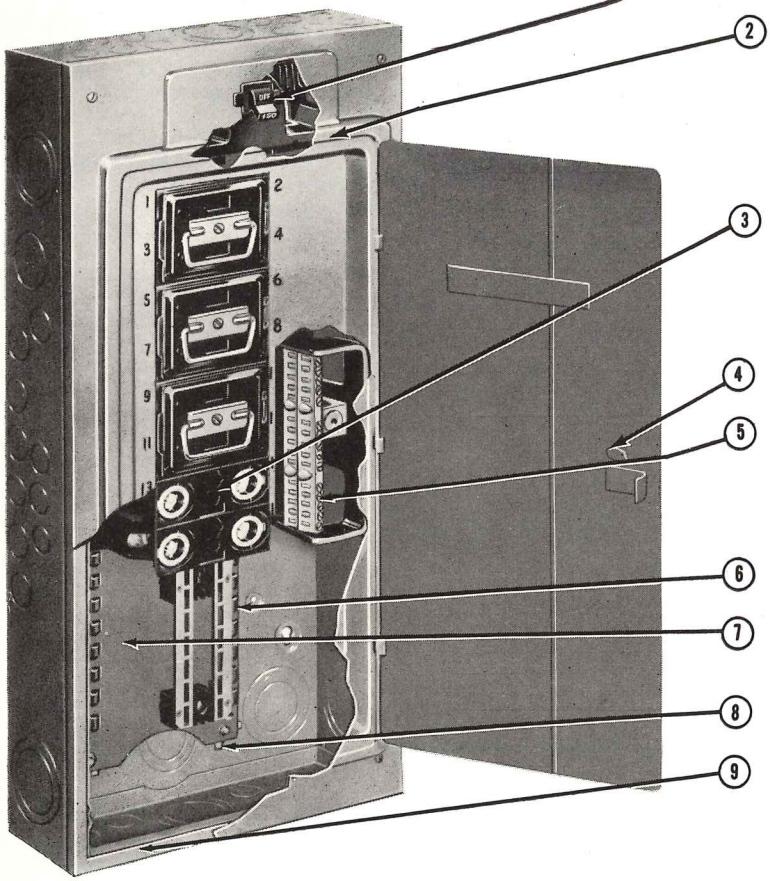
CONTROL AND PROTECT PLUG FUSE CIRCUITS

Switch and plug units are ideal for switching and protecting remote equipment such as attic fans.

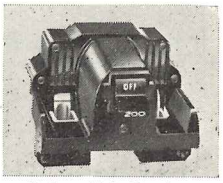
Exclusive catalog number 302TP is equipped with two heavy duty tumbler switches and plug fuseholders in ratings of 15, 20 and 30 amperes. Each pole may be switched individually on 110 volt lighting circuits and, since each pole is of opposite polarity, the units may be used on 240 volt circuits as a straight two-pole switch.

The new units may be stabbed in anywhere on the bus bars. Only two mounting space units required.

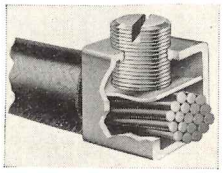
QUALITY FEATURES that mean versatility, ease of installation and economy



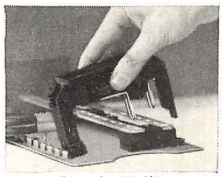
1. Bolt-on Main Breakers
. . . 125, 150, 200 amp, mount over the main lug studs. Knockout in trim accepts main breaker handle. See page 17 for detail application.


Bolt-on Main Breaker

2. Copper/Aluminum Lugs
. . . both enclosures and main lugs are approved by Underwriters' Laboratories, Inc. for use with copper or aluminum conductors. The 100 amp pullout units are also approved for aluminum cable.

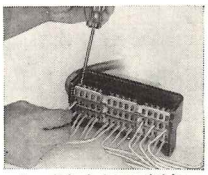

Copper/Aluminum Lugs

3. Stab-In Units
. . . just "heel" the end of the SF Stab-in Unit into mounting stop and press stabs into proper slots in the bus bars. The self-locking unit requires no tools or screws.


Stab-in Units

4. Provision for field mounting door lock.

5. Insulated groundable neutral bars
. . . have main lugs U/L approved for use with copper or aluminum conductors. **Step type neutrals** allow maximum room for wiring.


Insulated Groundable Neutral Bars

6. Sequence bus bar design
. . . insures load balance.

7. Removable interiors
. . . more convenient "roughing-in," easier wire pulling.

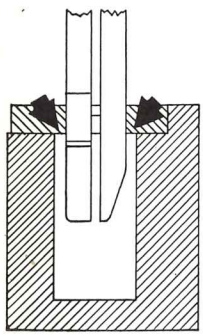
8. Trim and interior adjustable for plaster alignment.

9. Combination Flush/Surface Enclosures
. . . this patented "picture frame" eliminates the worry of not having the correct trim on the job. Device is shipped from factory ready for surface mounting . . . remove "picture frame" for flush mounting.

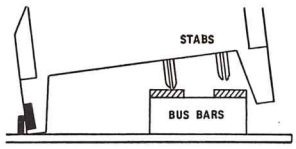
Comb. Flush/Surface Enclosures

Other Type SF Features . . .

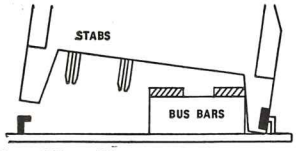
1. Exclusive pressure stab
. . . "millions tested" design securely stabs unit into bus bar for positive, low-resistance contact.



2. Water heater pullout
. . . for "off peak" water heater service. Simply reverse the 30 amp or 60 amp main pullout unit and stabs do not engage bus bars. These units are supplied with thru-feed lugs . . . no special units required.

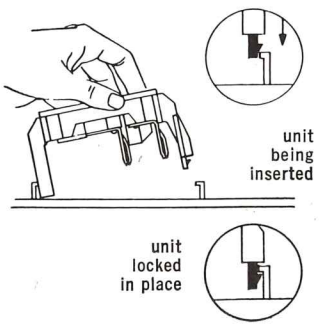


Normal position—
unit stabs lock into bus bars



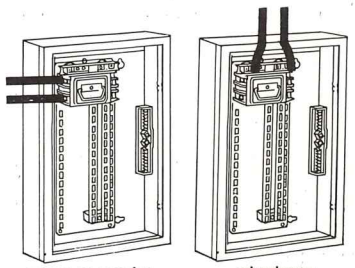
"off peak" position—
unit stabs do not engage bus bars

3. Locking clip
. . . permanently locks units in place for maximum safety. Unit can be removed only by qualified contractors. Clip meets non-interchangeability requirements . . . a feature now being promoted by many local electrical authorities.



4. DUAL RATED . . .
Load centers –
line wires are connected directly to main lugs.

Service equipment –
line wires are connected to main lugs of SF unit.


wired as service equipment

wired as a load center

DATA ON TYPE SF STAB-IN UNITS

Type SF Stab-in Fusible Units

Amp	Description	Application	Horsepower Ratings, Single Phase		Space Units Required	Catalog Number	List Price	Std. Pkg.	Pkg. Wt. Lbs.
			N.E.C. Standard	Time Delay					
15	Twin Type S Plug Fuse Unit Two 15 amp, Single Pole	Meet U.L. requirements for branch non-interchangeability using "S" fuses without fuse adapters. 301P-S20 prevents overfusing #12 wire; rejects 25, 30A fuses.	—	—	1	301P-S15	$ 3.00	60	28
20	Twin Type S Plug Fuse Unit Two 20 amp, Single Pole		—	—	1	301P-S20	3.00	60	28
30	Twin Type S Plug Fuse Unit Two 30 amp, Single Pole		—	—	1	301P-S30	3.00	60	28
30	Twin Edison Base Plug Fuse Unit Two 30 amp, Single Pole	For Edison base fuses.	—	—	1	301P	3.00	60	23
15	*Switch and Type S Plug Fuse Unit Two 15 amp, Single Pole	Meet U.L. ruling for branch non-interchangeability using "S" fuses without fuse adapters. Have heavy duty switch for 110V circuits; switch handles may be tied for 2 pole, 240V.	—	—	2	302TP-S15	8.00	30	30
20	*Switch and Type S Plug Fuse Unit Two 20 amp, Single Pole		—	—	2	302TP-S20	8.00	30	30
30	*Switch and Type S Plug Fuse Unit Two 30 amp, Single Pole		—	—	2	302TP-S30	8.00	30	30
30	Pullout, 30 amp, Two Pole, 120/240 volts	Branch circuit or water heater main. Also for electric heating circuit.	1½	3	1	301	6.00	60	40
60	Pullout, 60 amp, Two Pole, 120/240 volts	Branch or sub-main pullout.	3	10	2	602	6.00	30	36
60	Main Pullout, 60 amp, Two Pole, 120/240 volts	Main or water heater pullout.	—	—	2	602M	6.00	30	36
100	Pullout, 100 amp, Two Pole, 120/240 volts	Main or branch pullouts. Copper/aluminum lugs.	7½	15	2	102	21.00	20	56

* Cat. No. 302TP units may be converted for 2P 240V switching with handle tie bar, Cat. No. HTB.

Main Circuit Breakers

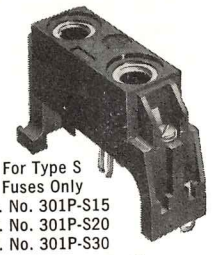
100	Circuit Breaker Main 100 amp, Two Pole, 120/240 volts	Use as main over the lug area of enclosure Cat. No. X1008.	—	—	–	NB100	20.50	24	16
125	Circuit Breaker Main 125 amp, Two Pole, 120/240 volts	Use as main over the lug area of enclosure Cat. No. X1511.	—	—	–	2B125	41.00	4	10
150	Circuit Breaker Main 150 amp, Two Pole, 120/240 volts	Use as main over the lug area of enclosure Cat. No. X1511.	—	—	–	2B150	41.00	4	10
200	Circuit Breaker Main 200 amp, Two Pole, 120/240 volts	Use as main over the lug area of enclosure Cat. No. X2016, X2020.	—	—	–	2B200	41.00	4	10

Accessories for SF Devices

Description	Catalog Number	List Price	No. Per Package
100 amp Space Twistout Filler	F100	$ .25	50
30 amp Space Twistout Filler	F30	.25	50
Wing Section Twistout Filler	F100W	.25	50
Locking Clip Release Tool	LCT	.50	20
Lock for Trim Door	TLOK	4.40	10
Handle Tie Bar for 2P Conversion, Cat. No. 302TP	HTB	.50	10
Bus Slot Closure Screw	BSC	.20	100
Water Heater Barrier, 30 amp unit	WHB30	1.00	10 pairs
Water Heater Barrier, 60 amp unit	WHB60	1.00	10 pairs
Main Lug Blocking Screws:			
For 100 amp Enclosure	LB100	.20	50
For 150 amp Enclosure	LB150	.20	50
For 200 amp Enclosure	LB200	.20	50

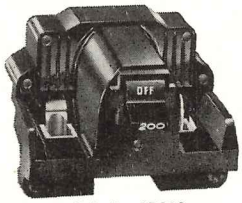
Adapter Frames for Extra Trim Overhang

For Device Number	Catalog Number	Standard Number	Packaging Approx. Wt.
1006, 1006-42	SFA1114	10	12 lbs.
X1008, 1008-44	SFA1118	10	12 lbs.
1012-66, 1212, 1212-66, X1511, 1512, 1512-66	SFA1324	10	14 lbs.
1516-88, X2016, 2016-88	SFA1434	10	15 lbs.
X2020, 2018-1206, 2020-1010	SFA1440	10	16 lbs.

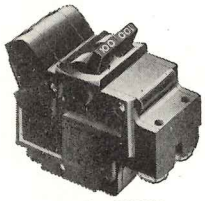


For Type S Fuses Only
Cat. No. 301P-S15
Cat. No. 301P-S20
Cat. No. 301P-S30

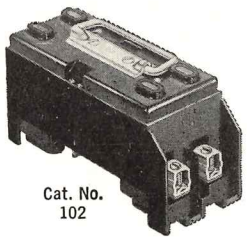
Switch and Type S Fuse Units
Cat. No. 302TP-S15
Cat. No. 302TP-S20
Cat. No. 302TP-S30



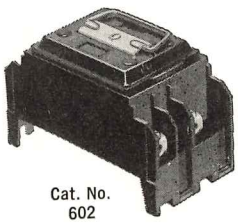
Cat. No. 2B200



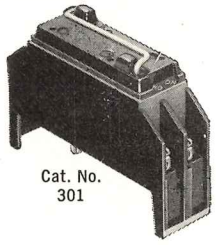
Cat. No. NB100



Cat. No. 102



Cat. No. 602



Cat. No. 301

Series Connected Enclosures — Solid Bus Construction

Mains Amp	Space Units Per Enclosure	MAXIMUM NUMBER OF UNITS IN AN ENCLOSURE					GENERAL PURPOSE ENCLOSURES Comb. flush/surface (except where noted)			RAINTIGHT ENCLOSURES		
		Twin Plug Fuse Branches	Switch and Plug Fuse 302TP	30 Amp 2 Pole Pullout Cat. No. 301	60 Amp 2 Pole Pullout Cat. No. 602	100 Amp 2 Pole Pullout Cat. No. 102	Catalog Number	List Price	Est. Wt., lbs.	Catalog Number	List Price	Est. Wt., lbs.
100	2	—	1	2	1	1	—	—	—	RH1002	$ 8.00	9
100	6	6 (12 Ckts)	3	6	3	0	1006	$ 6.00	9	RH1006	16.00	12
125	12	12 (24 Ckts)	6	12	6	1	1212	12.00	26	RH1212	22.00	30
150	12	12 (24 Ckts)	6	12	6	1	1512	12.00	26	RH1512	22.00	30

Convertible Mains Enclosures — Accommodate Main Breakers or Main Lug Assemblies

100	8	8 (16 Ckts)	4	8	4	0	X1008	$ 8.00	15	RHX1008	$18.00	23
150	11	11 (22 Ckts)	5	11	5	0	X1511	11.00	26	RHX1511	21.00	30
200	16	16 (32 Ckts)	8	16	8	2	X2016	16.00	29	RHX2016	26.00	32
200	20	20 (40 Ckts)	10	20	10	2	X2020	20.00	31	RHX2020	35.00	34

All of the above enclosures shipped without lugs. For load centers select appropriate lug assemblies.

Parallel Connected Enclosures — Split Bus Construction

Mains Amp	MAXIMUM NUMBER OF UNITS IN AN ENCLOSURE							GENERAL PURPOSE ENCLOSURES Comb. flush/surface			RAINTIGHT ENCLOSURES		
	Main Section (Not Including Lighting Main)†			Sub-Section				Catalog Number	List Price	Est. Wt., lbs.	Catalog Number	List Price	Est. Wt., lbs.
	30 Amp 2 Pole Pullout Cat. No. 301	60 Amp 2 Pole Pullout Cat. No. 602	100 Amp 2 Pole Pullout Cat. No. 102	Twin Plug Fuse Branches	Switch and Plug Fuse 302TP	30 Amp 2 Pole Cat. No. 301	60 Amp 2 Pole Cat. No. 602						
100	2	1	0	2 (4 Ckts)	1	2	1	1006-42	$ 6.00	9	RH1006-42	$16.00	12
100	2	1	0	4 (8 Ckts)	2	4	2	1008-44	8.00	15	RH1008-44	18.00	23
100	4	2	0	6 (12 Ckts)	3	6	3	1012-66	12.00	26	RH1012-66	22.00	30
125	4	2	0	6 (12 Ckts)	3	6	3	1212-66	12.00	26	RH1212-66	22.00	30
150	4	2	0	6 (12 Ckts)	3	6	3	1512-66	12.00	26	RH1512-66	22.00	30
150	6*	3	1	8 (16 Ckts)	4	8	4	1516-88**	37.00	29	RH1516-88**	47.00	32
200	6*	3	1	8 (16 Ckts)	4	8	4	2016-88**	37.00	29	RH2016-88**	47.00	32
200	10*	5	0	6 (12 Ckts)	3	6	3	2018-1206	18.00	65	RH2018-1206	28.00	72
200	8*	4	1	10 (20 Ckts)	5	10	5	2020-1010**	41.00	69	RH2020-1010**	51.00	77

* Device suitable for service equipment only when six or less disconnects are mounted in main section. See Sec. 230-70, N.E.C., and observe instructions on device label.
† Two space units are occupied by a 60 Amp or 100 Amp unit acting as a main disconnect for the sub-section. Totals shown are for units in addition to this main.
** 100A Main, Cat. 102, installed at factory and included in the price.

Main Breakers

Amperes	Catalog Number	List Price
100	NB100	$20.50
125	2B125	41.00
150	2B150	41.00
200	2B200	41.00

Main Lug Assemblies

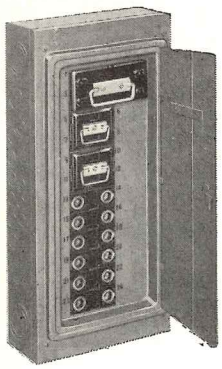
For use with devices indicated above when they are used for Loadcenter application.

Max. Ampere Rating	Wire Range	Catalog Number	List Price
125	#14-2/0	L125	$1.50
150	#8-3/0	L150	2.00
200	#6-250MCM	L200	2.00

Interchangeable Raintight Hubs

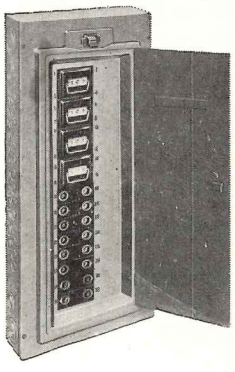
Description	Hub Cat. No.	List Price
Hub closing plate	HC	$ .25
¾" conduit opening	H75	2.60
1" conduit opening	H100	2.60
1¼" conduit opening	H125	2.60
1½" conduit opening	H150	2.60
2" conduit opening	H200	4.40
2½" conduit opening	H250	7.80

Packaged: 10 to a carton



Cat. No. 1512

Cat. No. X1511



Cat. No. X2016

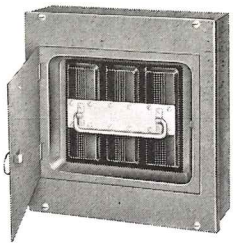
Fusible Service Equipment and Load Centers

FPE

CLASS
1130 Type AF—Single Pull Switch Disconnects—factory assembled

A compact fusible disconnect means. Flush or surface enclosure.

Amp. Rating	GENERAL PURPOSE ENCLOSURES Catalog Number Surface	Flush	List Price	Est. Wt., lbs.	RAINTIGHT ENCLOSURES Catalog Number	List Price	Est. Wt., lbs.
Single Phase Pullouts—3 Pole SN—120/240 V., A.C.—Insulated Groundable Neutral							
60	160	360	$12.00	7	RH160	$ 13.10	9
100	110	310	30.00	14	RH110	35.00	15
200	120	120	65.00	19	RH120	88.00	20
3 Phase Pullouts—3 Phase 4 Wire—240 V., A.C.—Insulated Groundable Neutral							
30	1304	3304	$14.40	10	RH1304	$ 20.90	15
60	1604	3604	22.90	10	RH1604	32.00	15
100	1104	3104	42.00	17	RH1104	59.00	20
200	1204	1204	89.00	23	RH1204	107.00	38

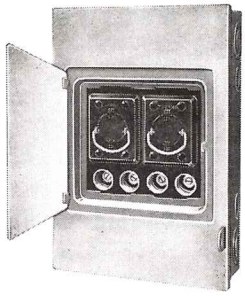


Cat. No. 1104

Type AF—Fusible Pullout Equipment—factory assembled

MAINS Number and Rating	BRANCHES 120/240V. Pullout	120V. Plug Fuse	GENERAL PURPOSE ENCLOSURES Enclosure Surface	Flush	List Price	Est. Wt., lbs.	RAINTIGHT ENCLOSURES Catalog Number	List Price	Est. Wt., lbs.
60 Amp. Service—Series Connected—Single Main 60 Amp. Pullout									
1-60-A	1-60A	4	264	464	$16.00	11	RH264	$26.00	13
100 Amp Service—Parallel Connected Main Pullouts									
2-60A	....	4	264C	464C	$16.00	11	RH264C	$26.00	13
200 Amp. Service—Parallel Connected Main Pullouts									
2-100A	—	—	—	—	—	—	RH2100	$101.60	34

Raintight devices arranged for use with interchangeable hubs. See below.



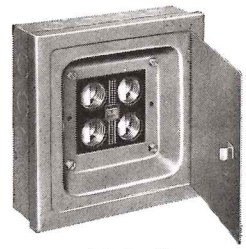
Cat. No. 264

CLASS
1133 Plug Fuse Load Centers

For inexpensive wiring applications or a few extra circuits (U.L. File E7613).

Junior Type

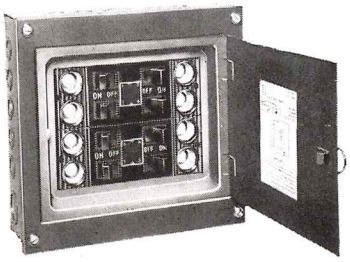
No. of Plug Branches	Mains Amp.	CATALOG NUMBER Surface	Flush	List Price	BOX DIMENSION Height	Width	Depth	Est. Wt., lbs.
Single Phase—Three Wire—125/250 Volt, A.C. Mains								
2	30	2S	2F	$ 5.70	5	6⅜	2½	2
4	35	4S	4F	7.80	7¼	7¼	2½	6
6	55	6S	6F	13.10	9⅜	7¼	2½	8
Three Phase—Four Wire—240 Volt, A.C. Mains								
6	30	406S	406F	$15.70	11	7¾	2⅞	6
8	35	408S	408F	20.90	13	8	3	12
10	60	410S	410F	30.00	16	8½	3	16
12	60	412S	412F	41.00	16	8½	3	17



Cat. No. 4S

Type NR—with flush spring lock

Three Phase—Four Wire—240 Volt, A.C. Mains								
14	60	NR414LS	NR414LF	$50.00	23¾	10½	3½	35
16	60	NR416LS	NR416LF	53.00	25⅛	10½	3½	38
18	60	NR418LS	NR418LF	59.00	28⅛	10½	3½	41
20	100	NR420L	NR420L	62.00	23⅞	13½	3⅞	44
22	100	NR422L	NR422L	69.00	23⅞	13½	3⅞	50
24	100	NR424L	NR424L	77.00	23⅞	13½	3⅞	54



Cat. No. NTPS308L

CLASS
1137 Type NTPS—Switch and Plug Fuse Load Centers

Enclosures are combination flush/surface. Solderless lug mains (U.L. File E7692).

No. of Branches	Mains Amp.	Catalog Number	List Price	BOX DIMENSIONS Height	Width	Depth	Est. Wt., lbs.
3 Wire—120/240 Volts, A.C.—Solid Neutral							
4	30	NTPS304	$ 19.00	8	12½	3⅝	15
8	60	NTPS308	29.00	11	12½	3⅝	20
12	60	NTPS312	56.00	23⅞	13½	3⅞	25
16	100	NTPS316	84.00	23⅞	13½	3⅞	32
20	100	NTPS320	118.00	23⅞	13½	3⅞	39
3 Phase, 4 Wire—120/208 Volts, A.C.—Solid Neutral							
8	60	NTPS408	$ 42.00	11	12	3⅝	20
12	60	NTPS412	62.00	23⅞	13½	3⅞	25
16	60	NTPS416	91.00	23⅞	13½	3⅞	32
20	100	NTPS420	131.00	23⅞	13½	3⅞	39

Interchangeable Hubs

Conduit Size	Cat. No.	List Price
Closing Plate	HC	$ .25
¾"	H75	2.60
1"	H100	2.60
1¼"	H125	2.60
1½"	H150	2.60
2"	H200	4.40
2½"	H250	7.80

Packaged 10 to a carton.

FPE

Fusible Service Equipment and Load Centers

ENCLOSURE DIMENSIONS AND KNOCKOUT DATA

General Purpose

Type SF (Stab-in Fusible)

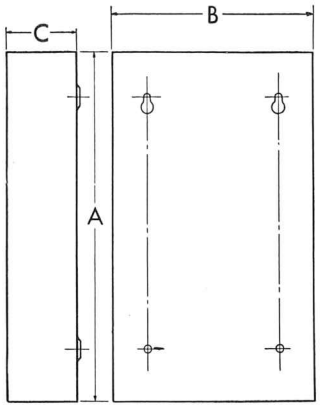
Catalog Number	Box Dimensions Height A	Width B	Depth C
1006	13¾	11¼	3⅝
1006-42	13¾	11¼	3⅝
X1008	17⅞	11¼	3⅞
1008	17⅞	11¼	3⅞
1008-44	17⅞	11¼	3⅞
1012-66	23⅞	13½	3⅞
1212	23⅞	13½	3⅞
1212-66	23⅞	13½	3⅞
X1511	23⅞	13½	3⅞
1512	23⅞	13½	3⅞
1512-66	23⅞	13½	3⅞
1516-88	34	14	3⅞
X2016	34	14	3⅞
2016-88	34	14	3⅞
2018-1206	40	14	3⅞
X2020	40	14	3⅞
2020-1010	40	14	3⅞

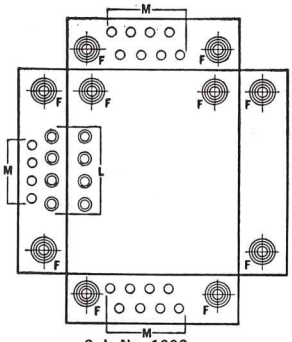
Type AF (Factory Assembled Fusible)

Catalog Number	Box Dimensions Height A	Width B	Depth C
110	12½	10	4
120	23⅞	13½	3⅞
160	9	7¼	3½
264	14	11⅜	3⅞
310	12½	10	4
360	9	7¼	3½
464	14	11⅜	3⅞
1104	12½	12	4
1204	18¼	13¾	4⅝
1304	9½	8½	3⅞
1604	9½	8½	3⅞
3104	12½	12	4
3304	9½	8½	3⅞
3604	9½	8½	3⅞

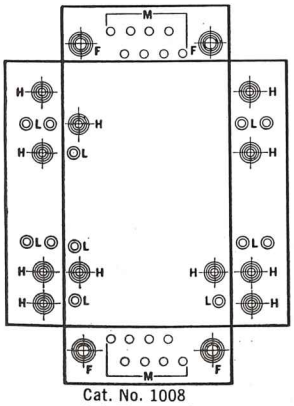
Raintight

Catalog Number	Box Dimensions Height A	Width B	Depth C
RH1002	14⅛	6⅞	4½
RH1006	17⅝	11¾	4½
RH1006-42	17⅝	11¾	4½
RH1008	20⅝	11¾	4½
RHX1008	20⅝	11¾	4½
RH1008-44	20⅝	11¾	4½
RH1012-66	27¼	14	4½
RH1212	27¼	14	4½
RH1212-66	27¼	14	4½
RHX1511	27¼	14	4½
RH1512	27¼	14	4½
RH1512-66	27¼	14	4½
RH1516-88	34⅛	14½	4½
RH2016	34⅛	14½	4½
RHX2016	34⅛	14½	4½
RH2016-88	34⅛	14½	4½
RH2018-1206	40⅛	14⅜	4½
RHX2020	40⅛	14⅜	4½
RH2020-1010	40⅛	14⅜	4½
RH110	13	8	4
RH120	20¼	11¼	5
RH160	9	7¼	3½
RH264	12¾	9⅛	3⅝
—	—	—	—
—	—	—	—
RH1104	20¼	14⅞	5
RH1204	20¼	14⅞	5
RH1304	14	8⅝	3⅞
RH1604	14	8⅝	3⅞
—	—	—	—
—	—	—	—
—	—	—	—
RH2100	23	12⅛	4¾

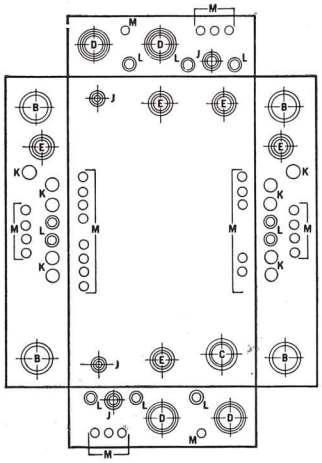




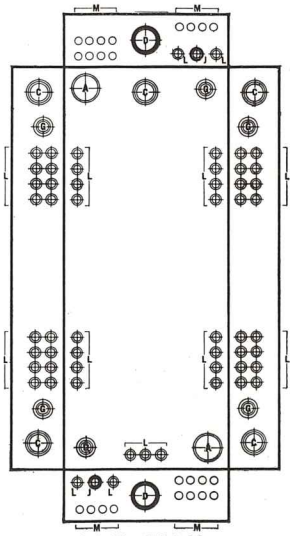
Cat. No. 1006
Cat. No. 1006-42



Cat. No. 1008
Cat. No. X1008
Cat. No. 1008-44



Cat. No. 1012-66
Cat. No. 1212
Cat. No. 1212-66
Cat. No. X1511
Cat. No. 1512
Cat. No. 1512-66



Cat. No. 1516-88
Cat. No. X2016
Cat. No. 2016-88
Cat. No. X2020
Cat. No. 2020-1010
Cat. No. 2018-1206

KEY TO K.O. DIMENSIONS

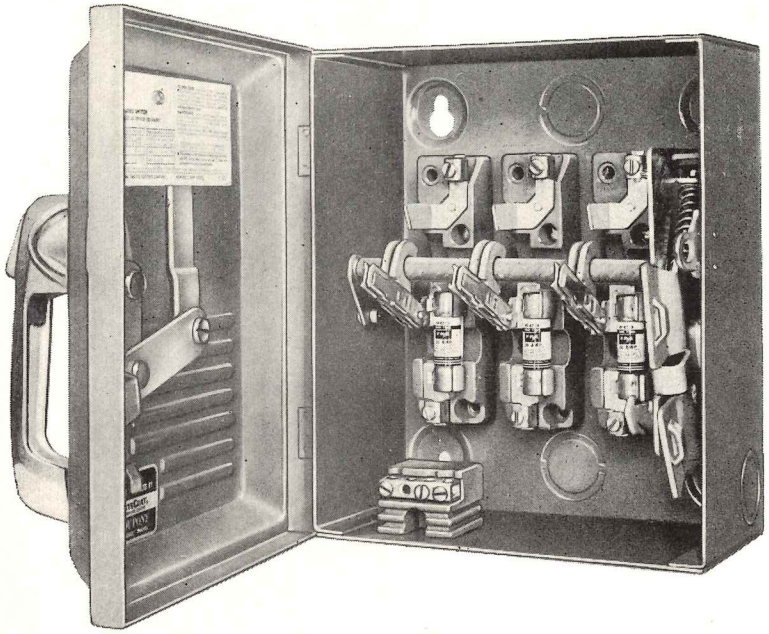
A = 2½ • 2 • 1½
B = 2 • 1½
C = 2 • 1½ • 1¼
D = 2 • 1½ • 1¼ • 1
E = 1½ • 1¼ • 1
F = 1½ • 1¼ • 1 • ¾
G = 1¼ • 1 • ¾
H = 1¼ • 1 • ¾ • ½
J = 1 • ¾ • ½
K = ¾
L = ¾ • ½
M = ½

FEATURES

that make FEDERAL PACIFIC switches the Best!

HEAVY DUTY TYPE A SWITCHES

30 to 200 AMPS



These front-operated safety switches have exclusive features that make them coolest in operation, safest, easiest to install and maintain.

FOR COOLEST OPERATION

Only two joints per pole for minimum heating.

Patented high pressure fuse holder. Extraordinary pressure is applied against the fuse and holds it in a vise-like grip.

FOR SAFETY

Visible blade construction. All parts are visible as well as accessible.

Guaranteed current break. Operating crossbar beneath the blades always forces the blades open.

Handle position visible when viewed from any angle.

Triple padlock provision on handle plus cover latch on enclosure.

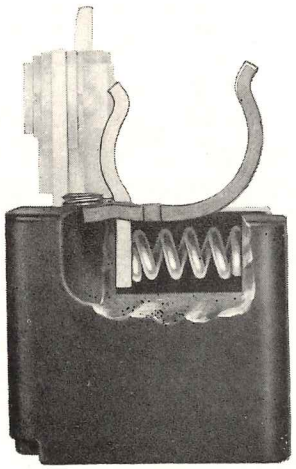
No projecting live parts. Reduces the danger of accidental contact.

FOR SIMPLIFIED MAINTENANCE

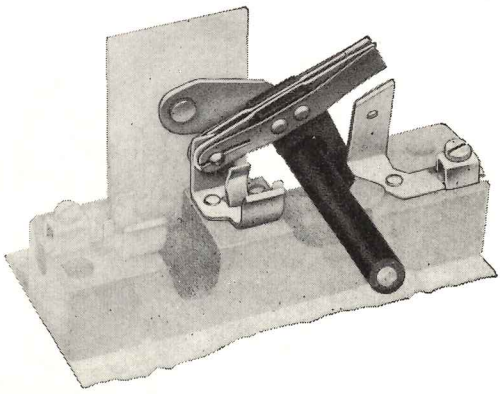
Unit Pole Block Construction. Simplifies replacement of accidentally damaged parts.

Fuses completely accessible and easily removed and installed.

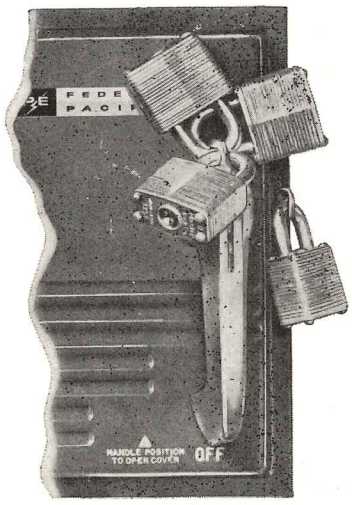
Type LD safety switches have many of the cool operation, safety, and simplified maintenance features of Type A safety switches.



HIGH PRESSURE FUSE HOLDER
Heavy coil spring located in the cavity of the block is unaffected by heat. Spring maintains constant pressure on the fuse, holding it in a vise-like grip.



POSITIVE CURRENT BREAK
The heavy insulated cross bar is placed **underneath** the switch blades. The blades cannot fail to open because they are forcibly driven out—not pulled—by the operating cross bar.



HANDLE LOCKING PROVISION
The rugged, cast handles of Type A safety switches have sliding padlock bars capable of handling 3 locks. Standard cover latches are also on the enclosures.

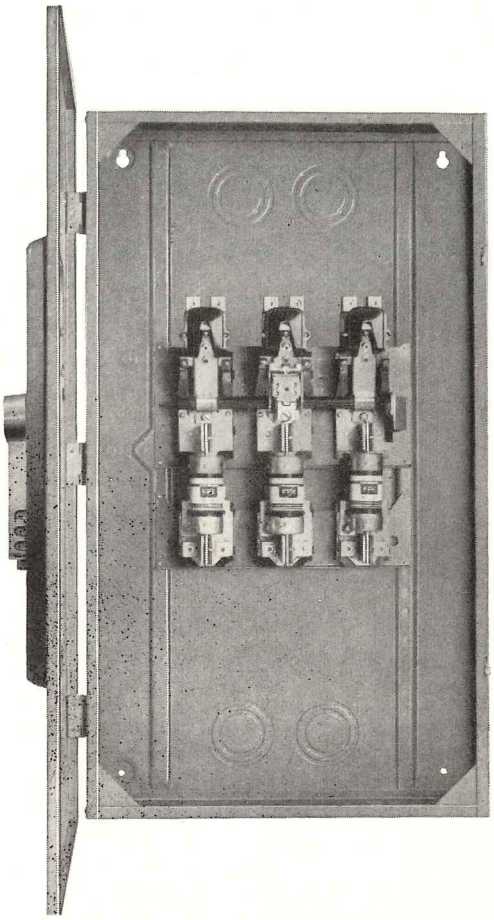
TYPE A-PLUS SAFETY SWITCHES . . .

WITH THE BEST FEATURES OF BOTH FUSES and CIRCUIT BREAKERS

400 to 1200 AMP

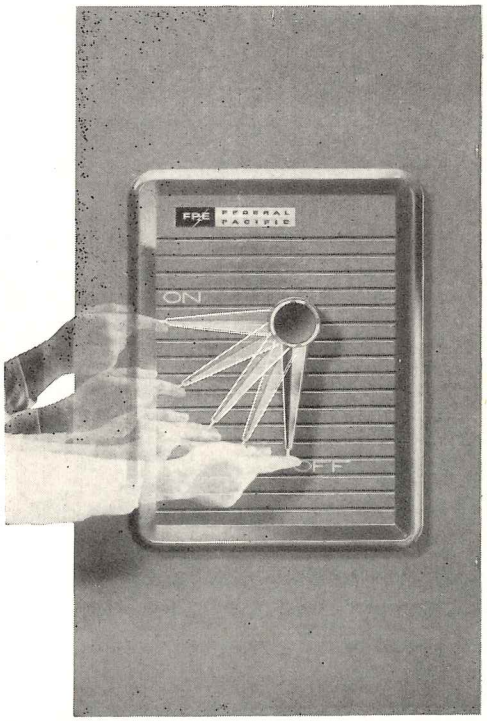
The inclusion of fuses in a circuit breaker type mechanism provides highly efficient, high amperage switches.

In addition to the load break characteristics of circuit breakers, Type A-plus Safety Switches are designed to take current limiting fuses for higher interrupting capacity. Tests show that these switches safely interrupt 12 times their ratings. Moreover, they can be disconnected under load—a characteristic which increases the safety factor of these switches.



Design Features that Add to the Performance of A-Plus Switches are:

Visible Blade Construction	for visible certainty of whether switch is "On" or "Off".
De-ionizing Arc Quenchers	for cooler, faster current interruption.
Quick Make, Quick Break	for longer contact life.
Front Operation	handle position clearly indicates whether switch is "On" or "Off".
High Pressure Fuse Holders	reduce contact resistance for cooler, more efficient switch operation.
Live Parts Recessed	for added safety.
High Pressure Silver Alloy Contacts	for low watt loss.
Removable Interiors	for easy wire pulling.



ADVANTAGES OF FINGERTIP OPERATION

SMOOTH:
The size of the handle provides great leverage in either direction. Tremendous power at your fingertips.

FAST:
Quick-make, Quick-break action drives contacts home or breaks them to open the circuit—instantaneously.

RUGGED:
The man-size handle is built for heavy duty industrial service. "On" and "Off" positions clearly visible from any angle.

SAFE:
The handle position always agrees with the position of the switch contacts. Release handle at any point of travel and it will immediately return to the true contact position—No dangerous false indication.

CLASS

1240 Heavy Duty Industrial Safety Switches–Type A

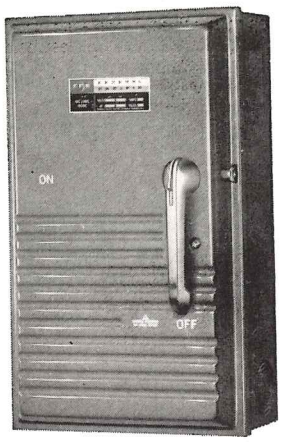
FPE

SINGLE THROW—FUSIBLE AND NON-FUSIBLE

Type A Safety Switches (U.L. File No. E5759) are specified for heavy duty motor circuits and for use on the toughest of industrial applications.

125/250 Volts

Type	Amp	HORSEPOWER RATINGS 240 V., A.C. Std. 1Ø	Std. 3Ø	Max. 1Ø	Max. 3Ø	D.C.	NEMA 1 General Purpose Catalog Number	List Price	NEMA 4 & 5 Cast Enclosure Catalog Number	List Price	NEMA 3R Raintight Enclosure Catalog Number	List Price
Fusible—2 Pole or 3-Wire SN (2 Blades—2 Fuses) 240 V., A.C.—250 V., D.C.												
	30	1½	3	3	7½	5	1322	$ 17.90	D1322	$119.00	RH1322	$ 32.00
	60	3	7½	10	15	10	1622	33.00	D1622	128.00	RH1622	61.00
	100	7½	15	15	30	20	1122	53.00	D1122	328.00	RH1122	79.00
	200	15	25	—	50	40	1222	94.00	—	—	RH1222	127.00
Fusible—3 Pole or 4-Wire SN (3 Blades—3 Fuses) 240 V., A.C.												
	30	—	3	—	7½	—	1332	21.90	D1332	133.00	RH1332	40.00
	60	—	7½	—	15	—	1632	39.00	D1632	146.00	RH1632	64.00
	100	—	15	—	30	—	1132	61.00	D1132	361.00	RH1132	92.00
	200	—	25	—	50	—	1232	105.00	—	—	RH1232	127.00
Non-Fusible—2 Pole or 3 Pole, 240 V., A.C.—250 V., D.C.												
	30	3	7½	—	—	5	5336	19.80	D5336	133.00	RH5336	36.00
	60	10	15	—	—	10	5636	36.00	D5636	142.00	RH5636	63.00
	100	15	25	—	—	15	5136	56.00	D5136	353.00	RH5136	84.00
	200	—	—	—	—	—	5236	87.00	—	—	RH5236	107.00

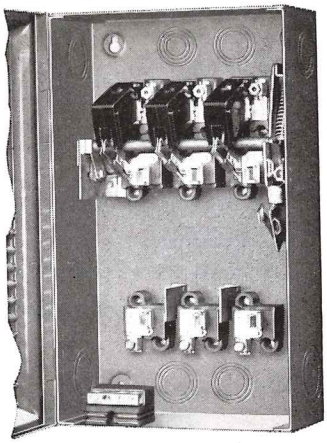


Cat. No. 1136

Rugged enclosure design for heavy duty use. Note the full-sized front handle and ready recognition of "ON" and "OFF" positions.

277/480 Volts and 600 Volts

Type	Amps	HORSEPOWER RATINGS 480 V., 3Ø Std.	Max.	600 V., 3Ø Std.	Max.	NEMA 1 General Purpose Catalog Number	List Price	NEMA 4 & 5 Cast Enclosure Catalog Number	List Price	NEMA 3R* Raintight Enclosure Catalog Number	List Price
Fusible—4 Wire SN (3 Blades, 3 Fuses) 277/480 V., A.C.											
	30	5	15	—	—	1336SN	$ 43.00	—	—	RH1336SN	$ 72.00
	60	15	30	—	—	1636SN	51.00	—	—	RH1636SN	85.00
	100	25	40	—	—	1136SN	92.00	—	—	RH1136SN	131.00
	200	—	—	—	—	1236SN	138.00	—	—	RH1236SN	180.00
Fusible—2 Pole or 3 Pole, 600 V., A.C.											
	30	5	15	7½	15	1336	39.00	D1336	$147.00	RH1336	65.00
	60	15	30	15	30	1636	46.00	D1636	160.00	RH1636	77.00
	100	25	40	30	40	1136	84.00	D1136	352.00	RH1136	119.00
	200	—	—	50	50	1236	125.00	—	—	RH1236	164.00
Non-Fusible—2 Pole, 600 V., A.C., 250 V., D.C. or 3 Pole, 600 V., A.C.											
	30	15	—	15	—	5336	19.80	D5336	133.00	RH5336	36.00
	60	30	—	40	—	5636	36.00	D5636	142.00	RH5636	63.00
	100	40	—	40	—	5136	56.00	D5136	353.00	RH5136	89.00
	200	—	—	50	—	5236	87.00	—	—	RH5236	107.00



Cat. No. 1136

Open view of above switch showing deionizing type arc chutes and visible blade construction. Operating crossbar under blades insures positive disconnect under all conditions.

Auxiliary Switch—1 Pole, N.O. or N.C.

Switch Rating	Catalog No.	LIST PRICE Factory Installed	Field Kit
30 Amp	AX30	$25.00	$15.00
60 Amp	AX60	25.00	15.00
100 Amp	AX100	35.00	25.00
200 Amp	AX200	35.00	25.00

Order Field Kit by catalog number shown. If factory installation desired order by complete switch catalog number and add "with auxiliary switch, catalog number _____, installed."

Lug Capacity

Switch Rating	Wire Size
30 Amp	14—4
60 Amp	14—4
100 Amp	8—0
200 Amp	2/0—4/0

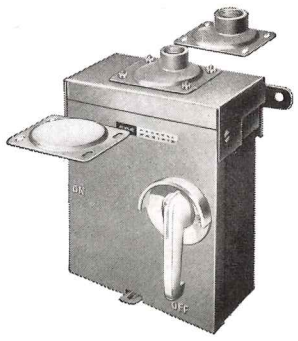
- Provisions for NEMA Class J Fuses—Refer to factory.
- Two-phase 4-wire or 5-wire switches available. Consult nearest field office for prices.
- Dimensions and shipping weight, see page 30.

Interchangeable, Quick-aligning Hubs for Raintight Switches

All raintight switches, 30 amp through 200 amp (Catalog prefix RH), are designed with provisions for quick-aligning, interchangeable hubs. Slots in the hub plates permit ready adjustability for conduit location. Hubs may be reversed to allow greater alignment flexibility. Switches are shipped from the factory with hub closing plate, Catalog no. HC, in place. Separate hubs may be ordered from the table below:

Conduit Size	Hub Cat. No.	List Price
closing plate	HC	$ .25
¾"	H75	2.60
1"	H100	2.60
1¼"	H125	2.60
1½"	H150	2.60
2"	H200	4.40
2½"	H250	7.80

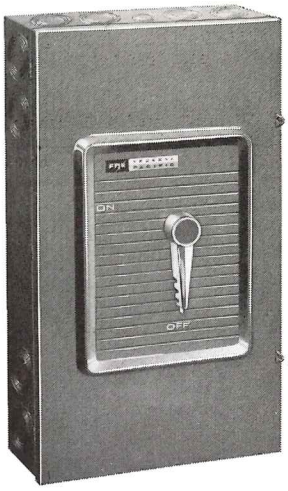
Packaged ten to a carton.



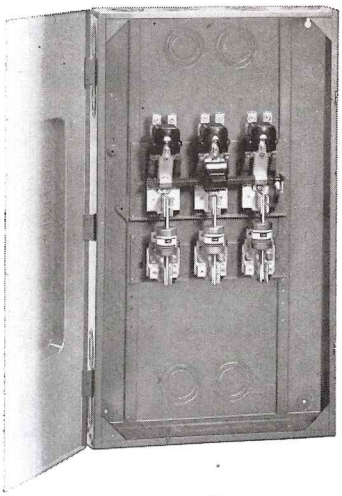
Closing plate and hubs for raintight enclosures.

Heavy Duty Industrial Safety Switches–Type A-plus

SINGLE-THROW — FUSIBLE AND NON-FUSIBLE



Cat. No. Q1432
Enclosure design shows distinctive modern styling. Large, front-operated handle throws "ON" or "OFF" by fingertip action.



Open view shows the "fuse and circuit-breaker" principle of the A-plus design. Note full wiring room—both gutters free.

Raintight Roof, Cat. No. RQ350, with single 3½" hub

Raintight Roof, Cat. No. RQ2-350, with two 3½" hubs

Type A-plus Safety Switches (U.L. File No. E5759) are available in sizes 400A through 1200A and designed on the "fuse and breaker" principle, similar to QMQB Type Panel and Switchboard units.

Type	Amps	NEMA 1 General Purpose		NEMA 3R Raintight	
		Catalog No.	List Price	Catalog No.	List Price
250 Volts Fusible—2 Pole, 240 V., A.C., 250 V., D.C.					
	400	Q1422	$ 194.00	RQ1422	$ 250.00
	600	Q1722	386.00	RQ1722	490.00
	800	Q1822	597.00	RQ1822	860.00
	1200	Q1922	826.00	RQ1922	1173.00
Fusible—3 Pole, 240 V., A.C.					
	400	Q1432	243.00	RQ1432	283.00
	600	Q1732	439.00	RQ1732	589.00
	800	Q1832	811.00	RQ1832	1074.00
	1200	Q1932	1031.00	RQ1932	1378.00
277/480, 600 Volts, A.C. Fusible—2 Pole, 600 V., A.C.					
	400	Q1426	299.00	RQ1426	355.00
	600	Q1726	473.00	RQ1726	577.00
	800	Q1826	732.00	RQ1826	995.00
	1200	Q1926	1030.00	RQ1926	1377.00
Fusible—3 Pole, 600 V., A.C.					
	400	Q1436	323.00	RQ1436	386.00
	600	Q1736	545.00	RQ1736	759.00
	800	Q1836	941.00	RQ1836	1204.00
	1200	Q1936	1238.00	RQ1936	1585.00
250, 480, 600 Volts, A.C.—250 Volts, D.C. Non-Fusible—2 Pole					
	400	Q5426	147.00	RQ5426	203.00
	600	Q5726	294.00	RQ5726	398.00
	800	Q5826	528.00	RQ5826	791.00
	1200	Q5926	722.00	RQ5926	1069.00
Non-Fusible—3 Pole					
	400	Q5436	196.00	RQ5436	268.00
	600	Q5736	347.00	RQ5736	536.00
	800	Q5836	706.00	RQ5836	969.00
	1200	Q5936	948.00	RQ5936	1295.00

Interchangeable Raintight Roofs

Raintight Type A-plus Switches, 400 amp and 600 amp (Catalog Prefix RQ) are available with unique interchangeable roofs to allow for a selection of a variety of entrance hubs. Switches are normally carried in stock with a solid roof. Separate roofs with welded hubs may be ordered from the table below:

Conduit Hub	Roof Cat. No.	List Price
Plain roof—no hub	RQ	$ 5.00
One - - 2½"	RQ250	7.80
One - - 3"	RQ300	12.10
One - - 3½"	RQ350	19.00
One - - 4"	RQ400	25.50
Two - - 2½"	RQ2-250	15.00
Two - - 3"	RQ2-300	20.00
Two - - 3½"	RQ2-350	27.00

Note: 800 amp and 1200 amp raintight switches available with welded hubs in roof. Order by catalog number of switch and add hub description. Example: "1—Catalog No. RQ1932 with two 4" hubs in roof."

Lug Capacities—Copper or Aluminum

Switch Rating	Lug Size—per Phase
400 Amp	One #4-500MCM and One #6-250MCM
600 Amp	Two #4-500MCM
800 Amp	Three #4-500MCM
1200 Amp	Four #4-500MCM

Current Limiting Fusing

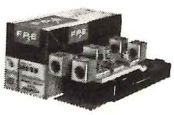
All Type A-plus Switches provide for the use of rejection type (slotted blade) current limiting fuses in ratings of 400 amp and 600 amp. Switches rated 800 amp and 1200 amp are normally furnished with two fuseholders in parallel on each pole. Single fuses for 800 amp and 1200 amp may be installed by ordering switches with Type CLF fuse adapters from the table below:

Switch Rating	Poles	Cat. No.	List Price	
			Factory Inst.	Field Kit
800 Amp	2	800-2CLF	$ 70.00	$50.00
800 Amp	3	800-3CLF	105.00	75.00
1200 Amp	2	1200-2CLF	80.00	60.00
1200 Amp	3	1200-3CLF	120.00	90.00

Auxiliary Switch—1 Pole, N.O. or N.C.

Switch Rating	Catalog No.	List Price	
		Factory Installed	Field Kit
400 Amp	AX400	$45.00	$35.00
600 Amp	AX600	45.00	35.00
800 Amp	AX800	60.00	50.00
1200 Amp	AX1200	60.00	50.00

Solid Neutral Bars



On the Type A-plus switches, 400A through 1200A, separate assemblies having full size neutral connectors and grounding lugs are available. These neutral bars, individually packaged with mounting hardware, are listed below:

Switch Rating	Catalog No.	List Price
400 Amp	400SN	$25.00
600 Amp	600SN	25.00
800 Amp	800SN	50.00
1200 Amp	1200SN	75.00

- Provisions for NEMA Class J Fuses, refer to factory.
- Dimensions and shipping weights—see page 30.

CLASS

1250 Type LD Safety Switches

FPE

SINGLE THROW—CARTRIDGE AND PLUG FUSES

Type LD Safety Switches (U.L. File No. E5759) are designed for general purpose applications required by commercial or residential installations. They are suitable for light duty motor circuits and are used for service entrance switches. They meet Federal Government specification W-S-865.

Cartridge Fuse Type—Fusible

Type	Amps	HORSEPOWER RATINGS 240V., A.C. Std. 1Ø	Std. 3Ø	Max. 1Ø	Max. 3Ø	D.C.	NEMA 1 General Purpose Catalog Number	List Price	NEMA 3R* Raintight Catalog Number	List Price
2 Pole, 120/240 V., A.C.—125/250 V., D.C.										
	30	1½	—	3	—	3	3322	$ 7.40	RH3322	$13.10
	60	3	7½	10	15	10	3622	14.90	RH3622	23.20
	100	7½	—	15	—	20	3122	30.00	RH3122	35.00
	200	15	25	—	50	20	3222	65.00	RH3222	88.00
	400	—	—	—	—	—	3422	157.00	R3422	221.00
	600	—	—	—	—	—	3722	340.00		
3 Wire SN (2 Blades—2 Fuses) 120/240 V., A.C.—125/250 V., D.C.										
	30	1½	3	3	—	3	3322SN	8.40	RH3322SN	13.80
	60	3	7½	10	15	10	3622	14.90	RH3622	23.20
	100	7½	—	15	—	20	3122	30.00	RH3122	35.00
	200	15	25	—	50	20	3222	65.00	RH3222	88.00
	400	—	—	—	—	—	3422SN	183.00	R3422SN	248.00
	600	—	—	—	—	—	3722SN	366.00		
3 Pole, 240 V., A.C.										
	30	1½	3	3	7½	3	3332SN	14.40	RH3332SN	20.90
	60	3	7½	10	15	—	3632	22.90	RH3632	32.00
	100	7½	15	15	20	—	3132	42.00	RH3132	59.00
	200	—	25	—	50	—	3232	89.00	RH3232	107.00
	400	—	—	—	—	—	3432	196.00	R3432	253.00
	600	—	—	—	—	—	3732	392.00		
4 Wire SN (3 Blades—3 Fuses) 240 V., A.C.										
	30	1½	3	3	7½	3	3332SN	14.40	RH3332SN	20.90
	60	3	7½	10	15	—	3632	22.90	RH3632	32.00
	100	7½	15	15	20	—	3132	42.00	RH3132	59.00
	200	—	25	—	50	—	3232	89.00	RH3232	107.00
	400	—	—	—	—	—	3432SN	222.00	R3432SN	344.00
	600	—	—	—	—	—	3732SN	418.00		

Two-phase, 4-wire or 5-wire switches available. Consult nearest field office for prices.

Non-Fusible 2 Pole, 120/240 V., A.C.—125/250 V., D.C.

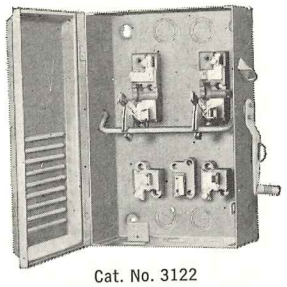
	30	3	7½	—	—	3	7322	7.40	RH7322	13.10
	60	10	15	—	—	10	7622	16.40	RH7622	26.00
	100	15	20	—	—	20	7122	35.00	RH7122	53.00
	200	25	50	—	—	20	7222	65.00	RH7222	88.00
	400	—	—	—	—	—	7422	157.00		
	600	—	—	—	—	—	7722	300.00		
3 Pole, 240 V., A.C.										
	30	3	7½	—	—	3	7332	11.20	RH7332	20.90
	60	10	15	—	—	10	7632	16.40	RH7632	32.00
	100	15	20	—	—	20	7132	35.00	RH7132	59.00
	200	25	50	—	—	20	7232	65.00	RH7232	107.00
	400	—	—	—	—	—	7432	157.00		
	600	—	—	—	—	—	7732	300.00		

Plug Fuse Type

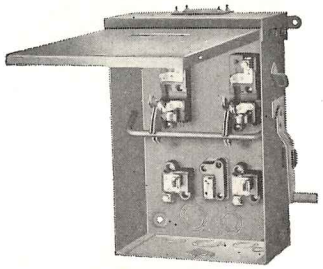
These 30 amp plug fuse switches are designed for use on light duty applications.

Description		Volts	HORSEPOWER RATING—A.C. 120 V.	240 V.	NEMA 1 General Purpose Catalog Number	List Price	NEMA 3R* Raintight Catalog Number	List Price
	1 Pole plus S/N (1 Blade, 1 Fuse)	120 V., A.C. 125 V., D.C.	½	—	0311SN	$5.00	RH0311SN	$11.20
	2 Pole (1Ø—2 Wire)	120/240 V., A.C. 125/250 V., D.C.	½	1½	0322 †D0322	6.20 7.40	RH0322	12.80
	2 Pole plus S/N (1Ø—3 Wire)	120/240 V., A.C. 125/250 V., D.C.	½	1½	0322SN †D0322SN	6.50 7.70	RH0322SN	13.10
	3 Pole (3Ø—3 Wire)	120 V., A.C.	—	—	0332	11.20	—	—

† Dead front.



Cat. No. 3122



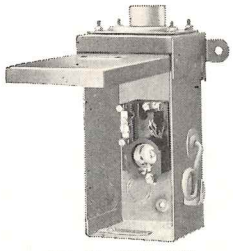
Cat. No. RH3122

*Hubs for Raintight Switches

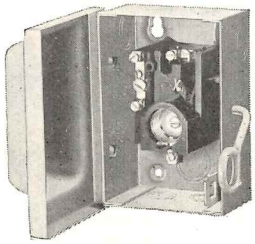
The raintight LD Switches rated 30 amp through 200 amp (Catalog Prefix RH) are designed to use the same quick-aligning, interchangeable hubs as furnished for Type A Switches. Refer to table on page 26.

The 400 amp Type LD Raintight Switches (Catalog Prefix R) are built with fixed hubs. When an entrance hub is required, select the proper prefix from the table below and order by complete catalog number. (Example: YR3432SN).

Hub Prefix	Conduit Size	List Price
U	One 2½"	$ 7.80
W	One 3"	12.10
X	One 3½"	19.00
Y	One 4"	25.50
UU	Two 2½"	15.00
WW	Two 3"	20.00
XX	Two 3½"	27.00



Cat. No. RH0311SN



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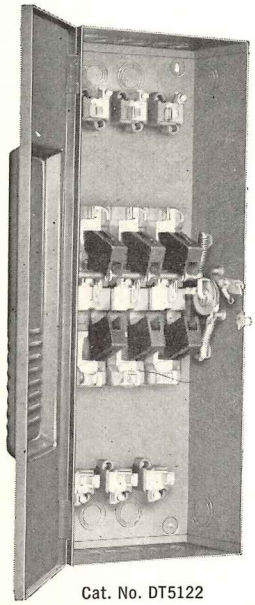


Cat. No. DT5122

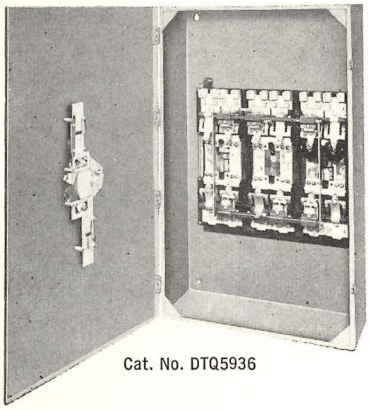
Double Throw Safety Switches

CLASS 1260

Double throw switches are used for transferring power from one source of supply to another. Although designed for heavy duty applications, these switches are not horsepower rated since they are intended for use as disconnect switches and not for use on motor circuits.

NEMA 1—General Purpose Enclosure

Amps	FUSIBLE		NON-FUSIBLE	
	Catalog Number	List Price	Catalog Number	List Price
2 Pole, 240 Volts, A.C., 250 Volts, D.C.				
30	DT1322	$ 62.00	DT5322	$ 39.00
60	DT1622	112.00	DT5622	61.00
100	DT1122	167.00	DT5122	88.00
200	DT1222	234.00	DT5222	118.00
3 Pole, 240 Volts, A.C.				
30	DT1332	66.00	DT5332	44.00
60	DT1632	121.00	DT5632	66.00
100	DT1132	204.00	DT5132	107.00
200	DT1232	308.00	DT5232	168.00
3 Pole, 600 Volts, A.C.				
30	DT1336	132.00	DT5336	74.00
60	DT1636	140.00	DT5636	80.00
100	DT1136	239.00	DT5136	118.00
200	DT1236	358.00	DT5236	182.00



Cat. No. DTQ5936

Double Throw Interruptors—Type DTQ

CLASS 1262

Class 1262 Double Throw Interruptors are radically new in design using the "fuse and circuit breaker" principle found in the Type A-plus Switches. Built for heavy duty transfer requirements, these switches may be wired for two incoming lines and a single load or for transferring two loads onto a single line. Mechanical interlock prevents closing one position until the other position is opened. Handle has "stop-shift" feature to prevent throwing "ON" to "ON" without stopping at center "OFF" position.

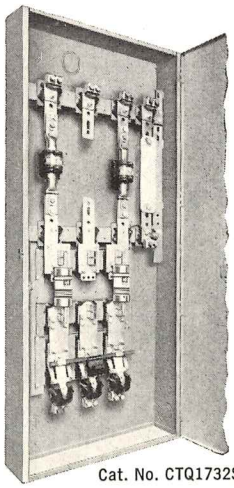
Amperes	TWO-POLE SWITCHES		THREE-POLE SWITCHES	
	Catalog Number	List Price	Catalog Number	List Price
Fusible—240 Volts				
400	DTQ1422	$ 473.00	DTQ1432	$ 649.00
600	DTQ1722	589.00	DTQ1732	784.00
800	DTQ1822	1791.00	DTQ1832	2433.00
1200	DTQ1922	2478.00	DTQ1932	3093.00
Fusible—600 Volts				
400	DTQ1426	508.00	DTQ1436	666.00
600	DTQ1726	1219.00	DTQ1736	1635.00
800	DTQ1826	2196.00	DTQ1836	2823.00
1200	DTQ1926	3090.00	DTQ1936	3714.00
Non-Fusible—250 or 600 Volts				
400	DTQ5426	374.00	DTQ5436	471.00
600	DTQ5726	525.00	DTQ5736	681.00
800	DTQ5826	1584.00	DTQ5836	2118.00
1200	DTQ5926	2166.00	DTQ5936	2844.00

Consult factory for enclosure dimensions.

Solid Neutral Bars

Double Throw Switches are not supplied with neutral connections. However, the enclosures are provided with mounting holes for neutral blocks. Self-tapping mounting bolts are furnished with neutral blocks listed below:

Switch Rating	Catalog Number	List Price
30 Amp	DT30SN	$ 7.00
60 Amp	DT60SN	10.00
100 Amp	DT100SN	15.00
200 Amp	DT200SN	20.00
400 Amp	DT400SN	25.00
600 Amp	DT600SN	25.00
800 Amp	DT800SN	50.00
1200 Amp	DT1200SN	75.00



Cat. No. CTQ1732SN

Current Transformer Entrance Switches

CLASS 1265

In these switches, the main switch and facilities for mounting current transformers are included in one cabinet. This switch is used in areas where the power company requires the current transformer and meter to be mounted in combination as a single unit of service equipment. (U.L. File No. E9560.)

Amps	4 WIRE SN (3 Blades—3 Fuses) 240 V., A.C.		
	Catalog Number	List Price	Est. Wt., lbs.
200	CTQ1232SN	$ 450.00	220
400	CTQ1432SN	650.00	306
600	CTQ1732SN	750.00	368
800	*CTQ1832SN	1150.00	500
1200	*CTQ1932SN	1550.00	639

* Two blades and two fuses in parallel each pole. For single fusing consult field office for prices.

Consult factory for enclosure dimensions.

Enclosed Safety Switches

Type A Safety Switches
General Purpose Enclosures

Catalog Number	DIMENSIONS Height	Width Enc.	Width Total	Depth Enc.	Depth Total	Appr. Pkg. Wt. lbs.
1122	17⅝	11¾	—	6½	8¼	22
1132	17⅝	11¾	—	6½	8¼	25
1136	19⅝	11¾	—	6½	8¼	32
1222	25	16⅞	—	9⅛	11⅝	60
1232	25	16⅞	—	9⅛	11⅝	64
1236	27½	16⅞	—	9⅛	11⅝	70
1322	9⅝	8¼	—	5⅛	7	10
1332	9⅝	8¼	—	5⅛	7	11
1336	15	10⅜	—	5¼	7	18
Q1422	42½	23½	24	6¼	9⅝	129
Q1426	42½	23½	24	6¼	9⅝	102
Q1432	42½	23½	24	6¼	9⅝	105
Q1436	42½	23½	24	6¼	9⅝	106
1622	15	10⅜	—	6½	8¼	19
1632	15	10⅜	—	6½	8¼	20
1636	17½	10⅜	—	6½	8¼	21
Q1722	42½	23½	24	6¼	9⅝	130
Q1726	42½	23½	24	6¼	9⅝	132
Q1732	42½	23½	24	6¼	9⅝	135
Q1736	42½	23½	24	6¼	9⅝	136
Q1822	46⅝	31¼	31¾	6⅜	9⅞	205
Q1826	46⅝	31¼	31¾	6⅜	9⅞	205
Q1832	46⅝	31¼	31¾	6⅜	9⅞	211
Q1836	46⅝	31¼	31¾	6⅜	9⅞	215
Q1922	Consult Factory for Dimensions					
Q1926						
Q1932						
Q1936						
5136	14⅝	11¾	—	6½	8¼	21
5236	19⅞	16⅞	—	9⅛	11⅝	55
5336	9⅝	8¼	—	5⅛	7	10
Q5426	42½	23½	24	6¼	9⅝	120
Q5436	42½	23½	24	6¼	9⅝	122
5636	14⅝	11¾	—	6½	8¼	22
Q5726	42½	23½	24	6¼	9⅝	124
Q5736	42½	23½	24	6¼	9⅝	126
Q5826	50⅝	30	30⅝	6¼	9⅞	190
Q5836	50⅝	30	30⅝	6¼	9⅞	194
Q5926	Consult Factory for Dimensions					
Q5936						

NEMA 4 and 5 Enclosures

D1122	21¹¹⁄₁₆	15⅞	—	—	8¹⁵⁄₁₆	33
D1126	21¹¹⁄₁₆	15⅞	—	—	8¹⁵⁄₁₆	35
D1132	21¹¹⁄₁₆	15⅞	—	—	8¹⁵⁄₁₆	34
D1136	21¹¹⁄₁₆	15⅞	—	—	8¹⁵⁄₁₆	36
D1222	30⅛	20¼	—	—	12¼	64
D1226	30⅛	20¼	—	—	12¼	67
D1232	30⅛	20¼	—	—	12¼	68
D1236	30⅛	20¼	—	—	12¼	70
D1322	13⅛	11¹⁵⁄₁₆	—	—	7³⁄₃₂	16
D1332	13⅛	11¹⁵⁄₁₆	—	—	7³⁄₃₂	17
D1326	16⅝	13⅜	—	—	7⅝	20
D1336	16⅝	13⅜	—	—	7⅝	26
D1622	16⅞	13⅜	—	—	8¹⁵⁄₁₆	25
D1626	21⅞	13¹¹⁄₁₆	—	—	9³⁄₁₆	35
D1632	16⅞	13⅜	—	—	8¹⁵⁄₁₆	28
D1636	21⅞	13¹¹⁄₁₆	—	—	9³⁄₁₆	26
D5336	13⅛	11¹⁵⁄₁₆	—	—	7³⁄₃₂	26
D5636	16⅞	13⅜	—	—	8¹⁵⁄₁₆	30
D5136	21¹¹⁄₁₆	15⅞	—	—	8¹⁵⁄₁₆	36
D5236	30⅛	20¼	—	—	12½	65

Type A Safety Switches
Double Throw Switches

Catalog Number	DIMENSIONS Height	Width Enc.	Width Total	Depth Enc.	Depth Total	Appr. Pkg. Wt. lbs.
DT1122	30⅝	12⅝	14½	6¾	—	52
DT1132	30⅝	12⅝	14½	6¾	—	56
DT1136	34⅝	12⅝	14½	6¾	—	56
DT1222	32½	17½	19¾	8½	—	82
DT1232	32½	17½	19¾	8½	—	100
DT1236	37¾	17¾	19¾	7¾	—	103
DT1322	12¼	11	13	6⅛	—	20
DT1332	12¼	11	13	6⅛	—	22
DT1336	12¼	11	13	6⅛	—	28
DT1622	22¾	12⅝	14½	6¾	—	38
DT1632	22¾	12⅝	14½	6¾	—	45
DT1636	27¾	12⅝	14½	6¾	—	47
DT5122	16⅛	12⅝	14½	6¾	—	26
DT5132	16⅛	12⅝	14½	6¾	—	28
DT5136	16⅛	12⅝	14½	6¾	—	42
DT5122	21⅛	17½	19¾	8½	—	57
DT5222	21⅛	17½	19¾	8½	—	65
DT5232	21⅛	17½	19¾	8½	—	68
DT5236	21⅛	17½	19¾	8½	—	70
DT5322	12¼	11	13	6⅛	—	17
DT5332	12¼	11	13	6⅛	—	19
DT5622	14⅜	12⅝	14½	6¾	—	25
DT5632	14⅜	12⅝	14½	6¾	—	26
DT5636	14⅜	12⅝	14½	6¾	—	28

Raintight Enclosures

RH1122	17¹⁵⁄₁₆	14	—	6½	8⅜	27
RH1132	17¹⁵⁄₁₆	14	—	6½	8⅜	29
RH1136	19⅜	14	—	6½	8⅜	32
RH1222	28⅛	19⅛	—	9⅛	11⅛	72
RH1232	28⅛	19⅛	—	9⅛	11⅛	79
RH1236	30¾	—	16½	8¾	11	83
RH1322	12⅜	10¹⁷⁄₃₂	—	5⅛	7³⁄₁₆	14
RH1332	12⅜	10¹⁷⁄₃₂	—	5⅛	7³⁄₁₆	15
RH1336	14⅞	12⅜	—	5⅛	7³⁄₁₆	21
RQ1422	42½	23½	24⅝	6¼	9½	113
RQ1432	42½	23½	24⅝	6¼	9½	141
RQ1426	42½	23½	24⅝	6¼	9½	151
RQ1436	42½	23½	24⅝	6¼	9½	159
RH1622	14⅝	12⅜	—	6½	8⅜	22
RH1632	14⅝	12⅜	—	6½	8⅜	24
RH1636	17¼	12⅜	—	6½	8⅜	26
RQ1722	42½	23½	24⅝	6¼	9½	196
RQ1732	42½	23½	24⅝	6¼	9½	202
RQ1726	42½	23½	24⅝	6¼	9½	205
RQ1736	42½	23½	24⅝	6¼	9½	211
RH5132	17⅜	14	—	6½	8⅜	28
RH5136	17⅜	14	—	6½	8⅜	30
RH5232	28⅛	19⅛	—	9⅛	11⅛	55
RH5332	12⅜	12⅜	—	5⅛	7⅜	15
RH5336	12⅜	12⅜	—	5⅛	7⅜	15
RQ5426	42½	23½	24⅝	6¼	9½	98
RQ5436	42½	23½	24⅝	6¼	9½	98
RH5632	14⅝	12⅜	—	6½	8⅜	28
RH5636	17¹⁵⁄₁₆	14	—	6½	8⅜	22
RQ5726	42½	23½	24⅝	6¼	9½	156
RQ5736	42½	23½	24⅝	6¼	9½	166

Type LD Safety Switches
General Purpose Enclosures

Catalog Number	DIMENSIONS Height	Width Enc.	Width Total	Depth	Appr. Pkg. Wt. lbs.
0311SN	6⅛	3⅞	4⅞	3¾	12(5)
0322	7⅛	4¹³⁄₁₆	5⅞	4	16(5)
D0322	7⅛	4¹³⁄₁₆	5⅞	4	16
0322SN	7⅛	4¹³⁄₁₆	5⅞	4	17(5)
D0322SN	7⅛	4¹³⁄₁₆	5⅞	4	17
0332	7⅛	6⅛	7⅛	4	5
0332SN	7⅛	6⅛	7⅛	4	17
3122	17⅝	11½	14	6½	22
3132	17⅝	11½	14	6½	24
3222	24⅞	16½	19	8½	54
3232	24⅞	16½	19	8½	56
3322	7⅛	4¹³⁄₁₆	5⅞	4	17(5)
3322SN	7⅛	4¹³⁄₁₆	5⅞	4	17(5)
3332SN	7⅛	6⅛	7⅛	4	15
3422	36⅜	19½	22⅛	10¾	100
3422SN	36⅜	19½	22⅛	10¾	102
3432	36⅜	19½	22⅛	10¾	103
3432SN	36⅜	19½	22⅛	10¾	118
3622	10¾	7¼	9	5¼	8
3632	10¾	7¼	9	5¼	9
3722	50½	22⅛	25	12½	169
3722SN	50½	22⅛	25	12½	171
3732	50½	22⅛	25	12½	182
3732SN	50½	27⅛	29¾	13	206
7122	17⅝	11½	14	6½	20
7132	17⅝	11½	14	6½	22
7222	24⅞	16½	19	8½	48
7232	24⅞	16½	19	8½	52
7322	7⅛	6⅛	7⅛	4	17(5)
7332	7⅛	6⅛	7⅛	4	5
7422	30⅜	19½	22⅛	10¾	84
7432	30⅜	19½	22⅛	10¾	87
7622	10¾	9½	11¼	5	9
7632	10¾	9½	11¼	5	10
7722	38⅜	22⅛	25	12½	179
7732	38⅜	22⅛	25	12½	184

Raintight Enclosures

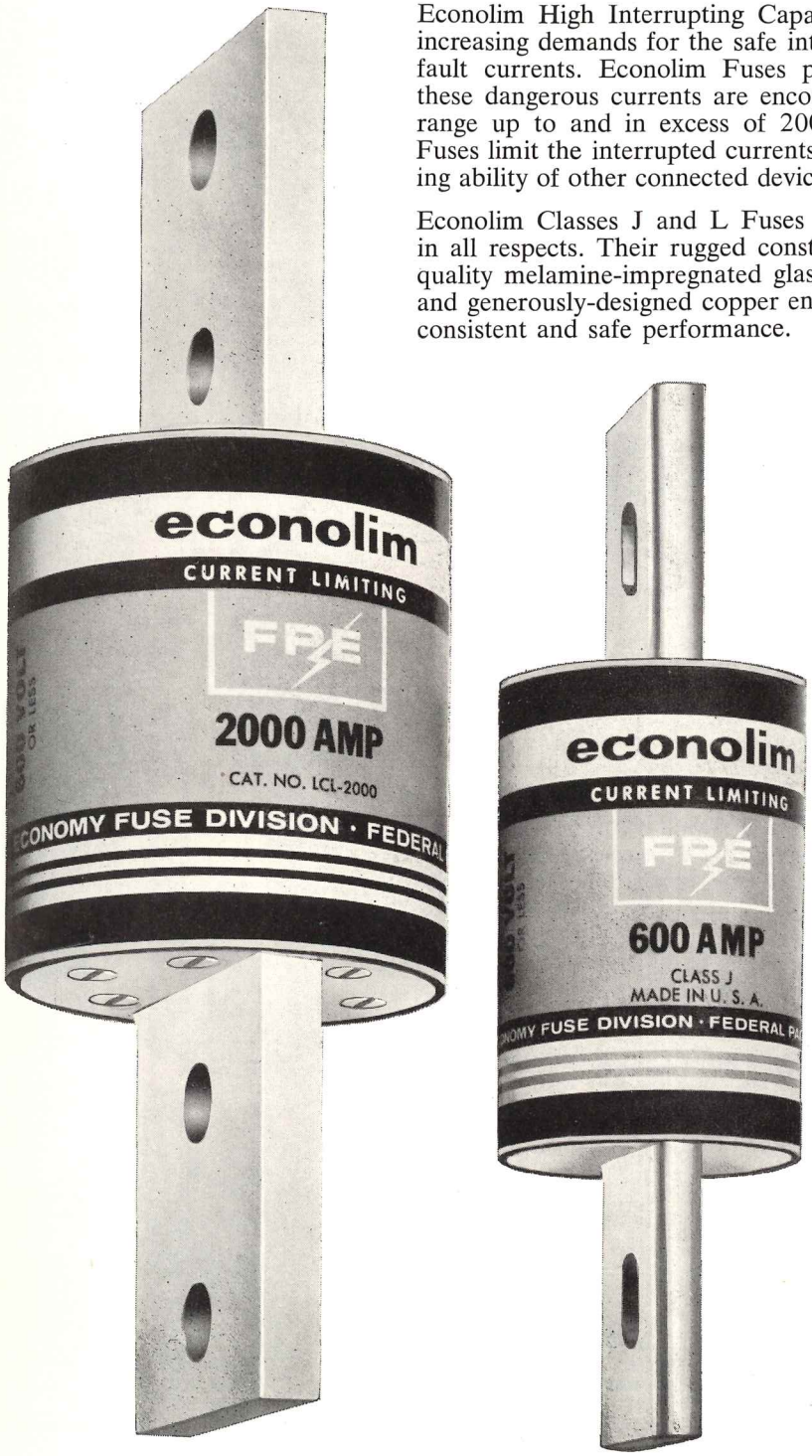
RH0311SN	7½	6½	4½	3⅞	23(5)
RH0322	8⅜	7⅜	5½	3⅞	22(5)
RH0322SN	8⅜	8¾	5½	3⅞	27(5)
RH3122	17⅜	14	14⅛	6⅜	20
RH3132	17⅜	14	14⅛	6⅜	27
RH3222	24⅞	19⅛	19⅛	8¾	54
RH3232	24⅞	19⅛	19⅛	8¾	61
RH3322SN	8⅜	7⅜	5½	3⅞	27(5)
RH3332SN	8⅜	8⅜	6¾	3⅞	6
R3422	36⅛	22	22	7¾	98
R3422SN	36⅛	22	22	7¾	103
R3432	36⅛	22	22	7¾	112
R3432SN	36⅛	26¾	26¾	8¼	112
RH3622	11	9¹³⁄₁₆	8¾	3⅞	10
RH3632	11	12⅛	11	3⅞	12
RH7122	17¼	11⅝	14⅛	6¼	22
RH7132	17¼	11⅝	14⅛	6¼	22
RH7222	19⅝	16⅜	19⅛	8⅝	58
RH7232	19⅝	16⅜	19⅛	8⅝	61
RH7322	7¼	6⅛	5½	3¾	7
RH7332	7¼	6⅛	5½	3¾	6
RH7622	10⅞	9⅜	11	4⅝	10
RH7632	10⅞	9⅜	11	4⅝	12

Weights determined on basis of one enclosure per package. Parentheses ( ) besides weight indicate number of enclosures in a package.

PROVEN PROTECTION

for Today's High-Capacity Electrical Systems Against High Energy Fault Currents

with Econolim® Fuses



Econolim High Interrupting Capacity Fuses are engineered to meet the ever increasing demands for the safe interruption and the limiting of potentially high fault currents. Econolim Fuses provide high interrupting capacity whenever these dangerous currents are encountered and safely interrupt them in the full range up to and in excess of 200,000 RMS symmetrical amperes. Econolim Fuses limit the interrupted currents to magnitudes consistent with the withstanding ability of other connected devices in the circuit.

Econolim Classes J and L Fuses comply with NEMA "Standards for Fuses" in all respects. Their rugged construction, combined with the use of the finest quality melamine-impregnated glass fiber tubing, closely calibrated silver links, and generously-designed copper end sections, provide maximum protection with consistent and safe performance.

The fusible links are designed to provide:

(1) Minimum heat rise above ambient temperatures at rated loads, thus providing better electrical characteristics.

(2) Precise calibration so that nuisance blowing is eliminated in a properly coordinated fuse-protected system, but overload opening will occur within prescribed time limits for 135% and 200% of rated current for Class J fuses and 150% of rated current for Class L fuses.

(3) Rapid arc extinguishing characteristics on short circuits up to and in excess of 200,000 amperes so as to limit the I^2t let-through energy.

A filler material of carefully graded quartz sand completely surrounds the fusible links and provides excellent thermal properties under normal loads. Under short circuit currents, the sand surrounding the arcs is fused into multiple glass barriers which effectively block-off the flow of current. This fusing absorbs heat from the arc, reducing arc energy and ionization.

Class J Econolim Fuses are designed only for Class J mounting provisions, 600 volts or less. For use in standard National Electrical Code, 250 volt or 600 volt mountings, Class H current limiting fuses are supplied. Both classes are available in ratings from 1 to 600 amperes.

Class L Econolim Fuses are available in ratings of 601-6000 amperes for use on 600 volts or less.

Low Voltage Fuses

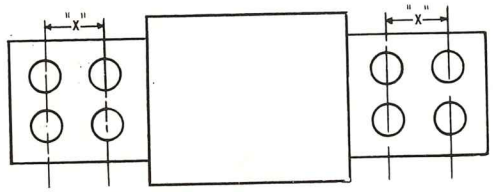
FPE

CLASS 1310 ECONOLIM® High Interrupting Capacity Fuses

Amperes	CLASS J NEMA Dimensions — 600 VOLTS OR LESS		CLASS H NEC Dimensions (Class J Electrical Characteristics) — 250 VOLTS OR LESS		600 VOLTS OR LESS	
	Cat. No.	List Each	Cat. No.*	List Each	Cat. No.*	List Each
30	JCL30	$ 1.20	NCL30	$ 1.33	SCL30	$ 1.77
60	JCL60	1.95	NCL60	3.27	SCL60	3.98
100	JCL100	3.00	NCL100	7.71	SCL100	9.21
200	JCL200	5.60	NCL200	15.23	SCL200	18.60
400	JCL400	12.30	NCL400	31.87	SCL400	36.29
600	JCL600	18.00	NCL600	40.73	SCL600	46.91

* Add suffix "R" to Catalog Number for rejection feature in ratings of 100 amperes and above. Example: SCL400R

CLASS L



Type I—Type II dimensional difference.

Amperes	CATALOG NUMBERS — Dimension "X" = 1¾"	Dimension "X" = 1⅜"	List Each
800	LCL800-I	LCL800-II	$ 48.45
1000	LCL1000-I	LCL1000-II	48.45
1200	LCL1200-I	LCL1200-II	48.45
1600	LCL1600-I	LCL1600-II	64.80
2000	LCL2000-I	LCL2000-II	81.00
2500	LCL2500-I	LCL2500-II	101.50
3000	LCL3000-I	LCL3000-II	121.25
4000	LCL4000-I	LCL4000-II	161.70
5000	LCL5000-I	LCL5000-II	202.00
6000	LCL6000-I	LCL6000-II	242.50

CLASS 1310 ECONOLIM®, Current Limiters for use in FPE Fusematic® And other fused molded case circuit breakers

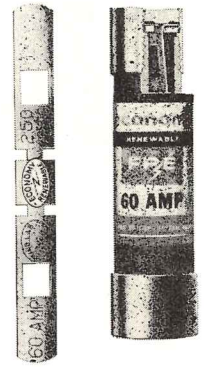
600 Volts or less		
Catalog Number	Use in FPE Breaker Frame Size	List Price Each
CLF30-04	XF 15-30 amp	$41.00
CLF100-01	XF 40-100 amp	41.00
CLKL400-02	XKL 125-400 amp	65.00
CLM600-03	XM 125-600 amp	95.00

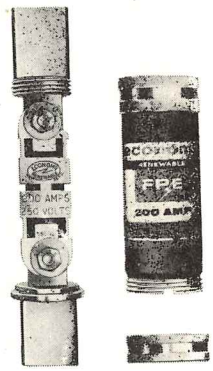
CLASS 1320 ECONOMY® Renewable Cartridge Fuses

Renewable Ferrule Type Fuses are of open end construction, with removable end plugs and slotted washers. Every part of the fuse is accessible, permitting easy removal of any deposit caused by blowing.

Renewable Knife-blade Type Fuses have both ends open and accessible, permitting easy cleaning when necessary. Knife-blade terminals are connected by a sturdy fibre bar, making renewal an easy operation. The fibre bar acts as a support for the copper terminals and for screwing the terminal assembly into the cartridge tube.

Whenever you have an electrical current "blow", you can restore your Economy Renewable Fuse to its original efficiency by inserting an Economy Renewal Link in the same cartridge.





Amperes	250 VOLTS — Catalog Number	List Each	NET PRICE PER 100 — Less Than $15.00 Net	$15.00 Net and over	Per Carton	600 VOLTS — Catalog Number	List Each	NET PRICE PER 100 — Less Than $15.00 Net	$15.00 Net and over	Per Carton
RENEWABLE FUSES										
* 1, 2, 3, 4, 5	Catalog Symbol "ERN" followed by amperes	$ .66	$ 48.00	$ 40.00	10	Catalog Symbol "ERS" followed by amperes	$ 1.63	$ 117.00	$ 98.00	10
* 6, 10, 15, 20, 25, 30		.61	44.00	37.00	10		1.53	110.00	92.00	10
* 35, 40, 45, 50, 60		1.22	88.00	74.00	10		2.45	176.00	147.00	10
† 70, 80, 90, 100		2.76	198.00	165.00	5		5.53	398.00	332.00	5
† 110, 125, 150, 175, 200		6.13	441.00	368.00	1		10.72	772.00	643.00	1
† 225, 250, 300, 350, 400		11.05	795.00	663.00	1		21.48	1547.00	1289.00	1
† 450, 500, 600		16.90	1216.00	1013.00	1		30.70	2210.00	1841.00	1
RENEWAL LINKS										
* 1, 2, 3, 4, 5	Catalog Symbol "ELN" followed by amperes	$ .077	$ 5.50	$ 4.60	100	Catalog Symbol "ELS" followed by amperes	$ .168	$ 12.10	$ 10.10	100
* 6, 10, 15, 20, 25, 30		.031	2.20	1.80	100		.077	5.50	4.60	100
* 35, 40, 45, 50, 60		.061	4.40	3.70	100		.123	8.80	7.40	100
† 70, 80, 90, 100		.138	9.90	8.30	50		.276	19.80	16.50	50
† 110, 125, 150, 175, 200		.306	22.00	18.40	25		.536	38.60	32.20	25
† 225, 250, 300, 350, 400		.551	40.00	33.00	10		1.07	77.30	65.00	10
† 450, 500, 600		.844	61.00	51.00	10		1.53	111.00	92.00	10

* Ferrule type. † Knife-blade type.

DISCOUNT SCHEDULE NET

ECON® Dual Element Cartridge Fuses

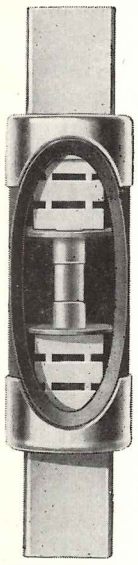
CLASS 1330

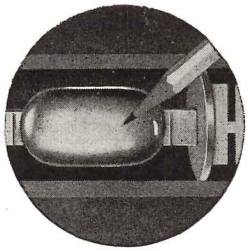
These fuses provide dual protection: 1. Time-control protection against unnecessary blowouts from temporary and harmless overloads. 2. Instantaneous protection against short circuits.

ECON Dual-Element Cartridge Fuses are especially adaptable for motor circuits with high starting torques; offer dependable motor and branch line protection and act as an effective guard against high temperature and its resulting hazard. Interrupting capacity: 100,000 RMS amperes.

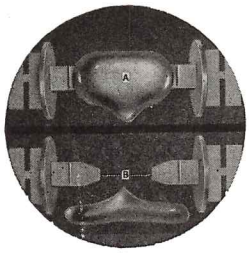
Amperes*	250 VOLTS					600 VOLTS				
	Catalog Number	List Each	NET PRICE PER 100 Less Than $15.00 Net	NET PRICE PER 100 $15.00 Net and over	Per Carton	Catalog Number	List Each	NET PRICE PER 100 Less Than $15.00 Net	NET PRICE PER 100 $15.00 Net and over	Per Carton
.1, .15, .2, .3, .4, .5, .6, .8, 1, 1.125, 1.25, 1.4, 1.6, 1.8, 2, 2.25, 2.5, 2.8, 3, 3.2, 3.5, 4, 4.5, 5, 5.6, 6.25, 7, 8, 9, 10, 12, 15, 17.5, 20, 25, 30	Catalog Symbol "ECN" followed by Amperes	$ .43	$ 31.00	$ 26.00	10	Catalog Symbol "ECS" followed by Amperes	$ 1.05	$ 75.00	$ 62.00	10
35, 40, 45, 50, 60		.85	61.00	51.00	10		1.82	131.00	109.00	10
70, 80, 90, 100		2.00	145.00	120.00	5		3.87	279.00	232.00	5
110, 125, 150, 175, 200		4.38	315.00	269.00	1		7.60	547.00	455.00	1
225, 250, 300, 350, 400		7.88	567.00	473.00	1		15.15	1091.00	910.00	1
450, 500, 600		12.11	873.00	727.00	1		21.80	1570.00	1309.00	1

* Ferrule type, 60 amp and below. Knife blade type, 65 amp and above.

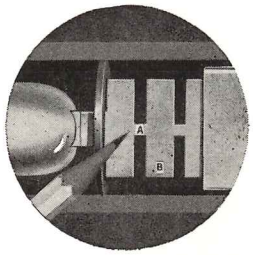




Timed delay on overloads! Econ-Alloy element protects against overloads up to 500% of fuse rating, prevents unnecessary fuse blowing and machine downtime.



Quick, positive action on dangerous overloads! Econ-Alloy (A) changes **instantly** to liquid. Extra-wide gap (B) provides "safe-break" distance, prevents arcing.



Instantaneous action on short circuits! Fuse links (A) at either end melt away instantly, causing heavier sections (B) to drop away.

ECO® One-Time Cartridge Fuses

CLASS 1340

The ECO One-Time Fuse is unexcelled for uniformity of current-time operation. Heavy fibre tubing is used on all knife-blade fuses. Caps are permanently rolled on the tube—not merely crimped. The caps on ferrule-type ECO Fuses are pierced without distorting their round shape. The piercing not only prevents relative movement, but also provides full clip contact and efficient venting.

Amperes*	Catalog Number	List Each	NET PRICE PER 100 Less than $15.00 net	NET PRICE PER 100 $15.00 Net and over	Per Carton
250 VOLTS					
1, 3, 6, 10, 15, 20, 25, 30	Catalog	$ .12	$ 8.80	$ 7.40	10
35, 40, 45, 50, 60	symbol	.24	17.50	14.60	10
70, 80, 90, 100	"EON"	1.10	77.00	64.00	5
110, 125, 150, 175, 200	followed	2.40	173.00	144.00	1
225, 250, 300, 350, 400	by	4.40	315.00	263.00	1
450, 500, 600	amperes	6.60	477.00	398.00	1
600 VOLTS					
1, 3, 6, 10, 15, 20, 25, 30	Catalog	$ .648	$ 46.60	$ 39.00	10
35, 40, 45, 50, 60	symbol	.97	70.00	58.00	10
70, 80, 90, 100	"EOS"	2.17	156.00	130.00	5
110, 125, 150, 175, 200	followed	4.20	302.00	252.00	1
225, 250, 300, 350, 400	by	8.45	608.00	507.00	1
450, 500, 600	amperes	12.10	871.00	726.00	1

* Ferrule type, 60 amp and below. Knife blade type, 65 amp and above.

Low Voltage Fuses

FPÉ

CLASS 1352 — CLEARSITE® Plug Fuses

Straight link plug fuses designed for use with standard Edison Base fuse holders.

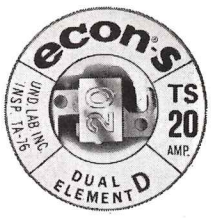
Amperes	Catalog No.	List Each	NET PRICE EACH	
			Less than 100	100 and over
Standard Sizes				
15 20 25 30	CP 15 CP 20 CP 25 CP 30	$.09	$.061	$.055
Sub-Standard Sizes				
1 2 3 5 6 8 10	CP 1 CP 2 CP 3 CP 5 CP 6 CP 8 CP 10	.10	.069	.062

Sizes not listed are Special—prices on application.

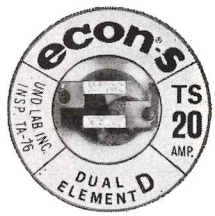
20 pkgs. of 5 to a shelf carton; 5 shelf cartons to a shipping carton.

Clearsite® Plug Fuse

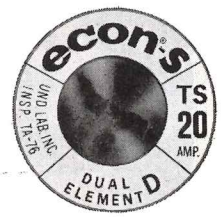
CLEARSITE AND ECON PLUG FUSES SHOW WHY THEY BLOW



Has not Blown



Has Blown on Overload



Has Blown on Short Circuit

CLASS 1354 — ECON® Dual Element Fuses—Plug Type—Edison Base

True dual-element time delay plug fuses. Interrupting rating, 10,000 amperes.

FOR CIRCUIT PROTECTION —15 to 30 Amperes, 125 Volts					FOR MOTOR PROTECTION — 0-14 Amperes								
Amp	Cat. No.	List Price Each	NET PRICE EACH		Amp	Cat. No.	Amp	Cat. No.	Amp	Cat. No.	List Price Each	NET PRICE EACH	
			Less than 100	100 and over								Less than 100	100 and over
15 20 25 30	TE 15 TE 20 TE 25 TE 30	$0.12	$.08	$.072	.3 .4 .8 1 1.125 1.25 1.4 1.6 1.8	TE .3 TE .4 TE .8 TE 1 TE 1.125 TE 1.25 TE 1.4 TE 1.6 TE 1.8	2 2.25 2.5 3.2 3.5 4 4.5 5 5.6	TE 2 TE 2.25 TE 2.5 TE 3.2 TE 3.5 TE 4 TE 4.5 TE 5 TE 5.6	6.25 7 8 9 10 12 14	TE 6.25 TE 7 TE 8 TE 9 TE 10 TE 12 TE 14	$.22	$.15	$.134

Carton quantities: Packed 4 fuses to a box; 100 to a shelf carton; 500 per shipping case.

CLASS 1358 — ECON® S Dual Element Fuses and Adapters

Econ® S Fuses are true dual element, time delay plug fuses. Non-interchangeable and non-tamperable.

FOR CIRCUIT PROTECTION

Type S FUSES					ADAPTERS				
Amp	Catalog Number	List Each	NET PRICE EACH		Amp	Catalog Number	List Each	NET PRICE EACH	
			Less than 100	100 and over				Less than 100	100 and over
15 20 25 30	TS 15 TS 20 TS 25 TS 30	$.18	$.12	$.11	15 20 30 —	A 15 A 20 A 30 —	$.15	$.10	$.092

NOTE: Packed 4 fuses per box; 100 to a shelf carton; 500 to shipping case. Cat. A30 adapter accommodates 20, 25, and 30 ampere Econ S Fuses.

Net Weight per 100: Fuses 5¾ lb; Adapters, 4 lb.

FOR MOTOR PROTECTION

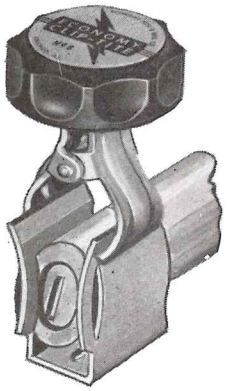
ECON S FUSES						ADAPTERS				For correct adapter, use rating of fuse or next larger rated adapter
Amp	Cat. No.	Amp	Cat. No.	List Each	NET PRICE EACH	Amp	Cat. No.	List Each	NET PRICE EACH	
					Less than 100 / 100 and over				Less than 100	100 and over
.3 .4 .5 .6 .8 1 1.125 1.4 1.6 1.8 2 2.25 2.5 2.8	TS .3 TS .4 TS .5 TS .6 TS .8 TS 1 TS 1.125 TS 1.4 TS 1.6 TS 1.8 TS 2 TS 2.25 TS 2.5 TS 2.8	3 3.2 3.5 4 4.5 5 5.6 6.25 7 8 9 10 12 14	TS 3 TS 3.2 TS 3.5 TS 4 TS 4.5 TS 5 TS 5.6 TS 6.25 TS 7 TS 8 TS 9 TS 10 TS 12 TS 14	$.22	$.15 / $.134	1* 1.25 1.6 2 2.5 3.2 4 5 6.25 8 10 15	A 1 A 1.25 A 1.6 A 2 A 2.5 A 3.2 A 4 A 5 A 6.25 A 8 A 10 A 15	$.15	$.10	$.092

* Also used for fractional-rated fuses.

ECONOMY® "Clip-Tite" Clamps for Fuse Clips

CLASS 1370

Insures tight electrical contacts of fuse clips, eliminating one of the principal causes of heating. Turning knob closes extra wide jaws.



Will Fit Fuse Clips Listed Below	Jaws Open To	Jaws Close To	Type Clip	Cat. No.	List Each	NET PRICE EACH: Less Than $15.00 Net	NET PRICE EACH: $15.00 Net and Over	Carton Quan.	Weight per 100
30 Amp 250 Volt & Midgets	19/32"	3/8"	B	1	$0.98	$0.65	$0.59	12	6
60 Amp 250 Volt & 30 Amp 600 Volt	15/16"	9/16"	B	2	1.25	.83	.75	12	9
60 Amp 600 Volt	1 7/32"	3/4"	B	4	1.52	1.01	.91	12	12
100 Amp 250 or 600 Volt	7/16"	0	E	5	1.46	.97	.88	12	10
200 Amp 250 or 600 Volt	9/16"	0	E	6	2.12	1.41	1.27	6	20
400 Amp 250 or 600 Volt	3/4"	3/32"	E	7	3.05	2.03	1.82	6	28
600 Amp 250 or 600 Volt	3/4"	3/32"	E	8	3.86	2.57	2.31	6	43
100 Amp 250 or 600 Volt	1 7/32"	3/4"	D	4	1.52	1.01	.91	12	12
200 Amp 250 or 600 Volt	1 1/2"	7/8"	D	9	2.35	1.76	1.62	6	20
400 Amp 250 or 600 Volt	1 7/8"	1 3/16"	D	10	3.50	2.62	2.42	6	34
600 Amp 250 or 600 Volt	2 3/16"	1 7/8"	D	11	4.62	3.47	3.20	6	45

ECONOMY® Fuse Puller

CLASS 1372

Economy Fuse Pullers safeguard electricians against shocks and burns. Fuse Pullers are made of finest vulcanized fibre and will withstand breakdown test of 35,000 volts, dry. Surface and edges of all laminations are treated and sealed to minimize moisture absorption.

Cat. No.	Size	Description	List Each	NET PRICE EACH: Less Than $15.00 Net	NET PRICE EACH: $15.00 Net and Over
MP500	MIDGET 4 13/16" long, 3 laminations	For fuses 1/4" to 1/2" diameter, gripping jaws on one end only.	$ .60	$ .45	$ .43
PP750	POCKET 7 1/2" long, 5 laminations	For fuses 0 to 200 amp, 250 volts; and 0 to 100 amp, 600 volts.	1.33	1.00	.95
GP120	GIANT 12" long, 7 laminations	For fuses 61 to 600 amp, 250 volts; and 61 to 400 amp, 600 volts.	3.53	2.65	2.50
JP1975	JUMBO 19 3/4" long, 9 laminations	For fuses 200 to 800 amp, 250 volts; and 200 to 600 amp, 600 volts.	11.60	8.70	8.25

Fuse Reducers

CLASS 1374

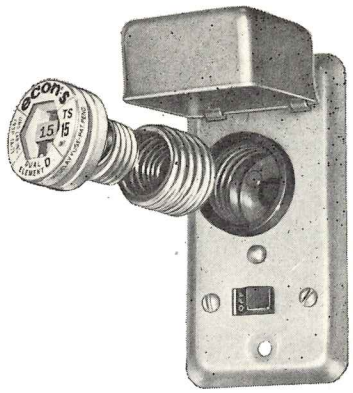
250 Volts

Amperes	Catalog Number	List Price Per Pair	NET PRICE PER PAIR: Less Than $15.00 Net	NET PRICE PER PAIR: $15.00 Net and Over
60 to 30	263	$0.74	$0.53	$0.44
100 to 30	213	1.37	.98	.82
100 to 60	216	1.00	.72	.60
200 to 60	226	3.02	2.18	1.81
200 to 100	2621	2.00	1.44	1.20
400 to 200	2642	7.90	5.67	4.75

600 Volts

Amperes	Catalog Number	List Price Per Pair	NET PRICE PER PAIR: Less Than $15.00 Net	NET PRICE PER PAIR: $15.00 Net and Over
60 to 30	663	$0.84	$0.61	$0.51
100 to 30	216	1.00	.72	.60
100 to 60	616	1.79	1.29	1.07
200 to 60	626	5.00	3.60	3.00
200 to 100	2621	2.00	1.44	1.20
400 to 200	2642	7.90	5.67	4.75

FPE



Economy Box Cover Units are designed for use by installers of small motors in attic fans, stokers, drill presses, freezers, washers, refrigerators, and other home, store, office, farm and factory appliances. Inexpensive and easy-to-install Economy Box Cover Units drastically reduce the danger and expense of motor burnouts.

Economy Box Cover Units are listed with Underwriters' Laboratories, Inc. for both motor running and short circuit protection when used with Type S fuses.

Definition of Catalog Numbers

A = 2¼" Handy Box
B = 2¾" Switch Box
C = 4" Octagon Box
D = 4" Square Box

1st digit = Fuse Receptacle
2nd digit = Plug-in Receptacle
3rd digit = Single Pole Switch
4th digit = Pilot Light

Examples: Catalog No. A1100 is a 2¼" Handy Box with one fuse receptacle, one plug-in receptacle, no single pole switch, no pilot light.

Catalog No. D1111 is a 4" square box with one fuse receptacle, one plug-in receptacle, one single pole switch and one pilot light.

Available in four cover sizes to fit the box you have — and in many combinations listed below

Description	Catalog Number	List Price Each	NET PRICE EACH: Less Than $15.00	NET PRICE EACH: $15.00 and Over	Wt. Per 100 (Lbs.)
FOR DEVICES USING ATTACHMENT CORD & PLUG The Plug-in Receptacle used is of the grounding type. It takes either ordinary 2-prong attachment plug cap, or the 2-prong parallel polarized cap with one wide prong, or 3-prong grounding type cap. For motors ¾ h.p. or smaller—125 Volts or less	A1100 2¼" cover for Handy box B1100 2¾" cover for Switch box C1100 4" cover for Octagon box D1100 4" cover for Square box	$1.27 1.27 1.37 1.37	$0.84 .84 .92 .92	$0.76 .76 .82 .82	39 40 58 60
FOR DEVICES PERMANENTLY CONNECTED TO CIRCUIT WHERE SWITCH CONTROL IS DESIRED Fuse Holder and Switch Units provide both protection for the motor and a switch for turning the devices "on" and "off". (Switch Units approved for AC use only). For A.C. motors only—½ h.p. or smaller—125 volts or less	A1010 2¼" cover for Handy box B1010 2¾" cover for Switch box C1010 4" cover for Octagon box D1010 4" cover for Square box	$1.27 1.27 1.38 1.38	$0.85 .85 .92 .92	$0.76 .76 .83 .83	38 39 57 59
IF NO SWITCH OR PLUG-IN RECEPTACLE IS DESIRED Use Fuse Holder mounted alone on Box-Cover Unit. This provides motor protection but without the convenience of a switch or plug-in receptacle. For motors ¾ h.p. or smaller—125 Volts or less	A1000 2¼" cover for Handy box B1000 2¾" cover for Switch box C1000 4" cover for Octagon box D1000 4" cover for Square box	$0.72 .72 .88 .88	$0.48 .48 .59 .59	$0.44 .44 .53 .53	36 36 55 62
WHERE IT IS IMPORTANT TO KNOW IF CIRCUIT TO A PLUG-IN DEVICE IS ENERGIZED Use a Fuse Holder combined with Pilot Light, Switch, and grounding type Plug-in Receptacle. Pilot light glows when switch is on—goes out when switch is off or fuse blows. For A.C. motors only—½ h.p. or smaller—125 Volts or less	D1111 4" cover for Square box	$3.59	$2.40	$2.15	75
FOR REMOTE CONTROLLED MOTORS Use a Fuse Holder, Pilot Light, and Switch for motors that operate out of sight. Pilot light indicates whether or not the motor is running. Attic fans, basement sump pumps. dehumidifiers, etc., can use this Box-Cover Unit for convenience and to reduce possibility of a motor burnout. For A.C. motors only—½ h.p. or smaller—125 Volts or less	D1011 4" cover for Square box	$2.47	$1.65	$1.48	68
FOR SEPARATE CONTROL OF TWO MOTORS Two Fuse Holders and two Switches combine protection for two motors with their operating switches. Very handy for oil burners, stokers, etc. Or, can be used to locate in one spot, protection and control switches for motors on two separate appliances. For A.C. motors only—½ h.p. or smaller—125 Volts or less	D2020 4" cover for Square box	$2.36	$1.58	$1.42	75
TWO FUSE OUTLETS ONLY For two separate motor driven devices or for two motors in one device as in an oil burner. For A.C. motors—¾ h.p. or smaller—125 Volts or less	D2000 4" cover for Square box	$1.38	$0.92	$0.83	72
TO OPEN BOTH SIDES OF CIRCUIT BY ONE SWITCH Two Fuse Holders with a double pole switch meet the requirements of opening both sides of a motor circuit and reducing the chance of motor burnout. This Unit can also be used on two separate motors (of 125 volts or less) to turn them off or on with the same switch. For application refer to N.E.C., article 240-6c, 1962 edition. For A.C. motors only—½ h.p. or smaller—125 Volts or less	D2010* 4" cover for Square box	$2.65	$1.77	$1.59	70

* Only exception to numbering system—2 pole switch furnished instead of one pole switch.

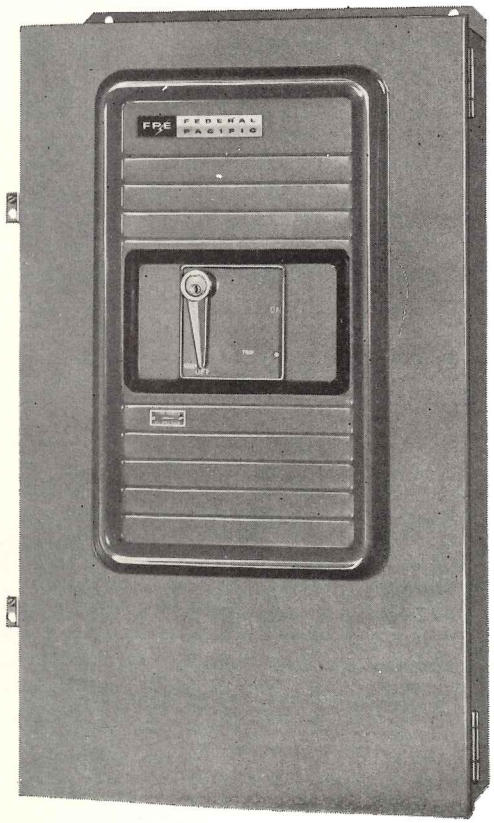
enclosed rotary handle circuit breakers

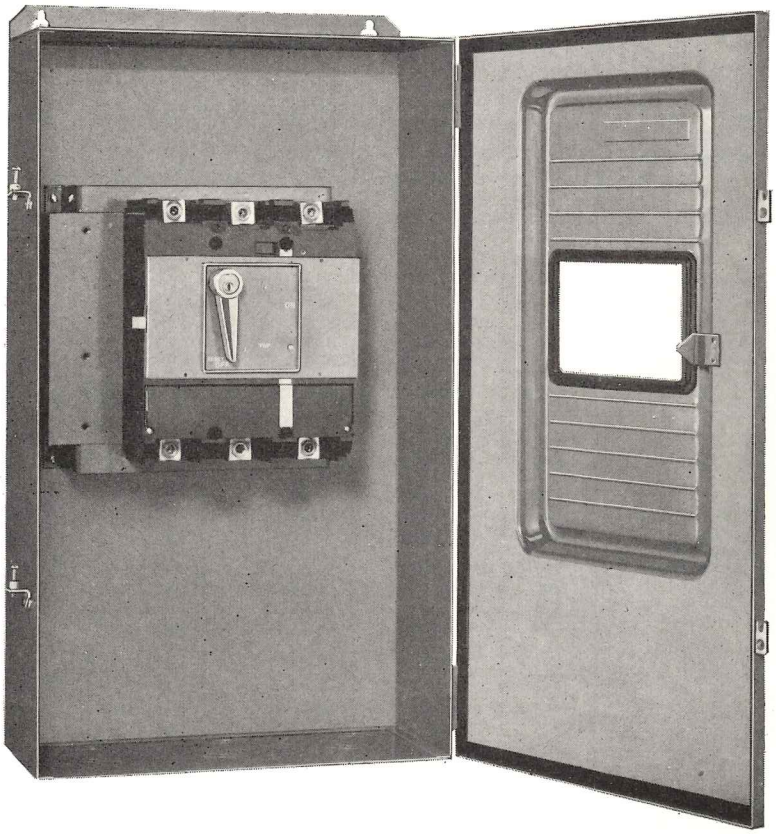
eliminate the weakest link to complete safety

Federal Pacific's new Rotary Handle Circuit Breakers greatly simplified the construction of enclosed industrial circuit breakers. Now, the breaker itself is operated to "ON", "OFF", and "Reset" positions through an opening in the enclosure door. Thus, the concept of rotary handle breakers eliminates the mechanical linkage—the weakest link—between cover handle and breaker handle.

Not only is the linkage trouble zone removed but rotary handle breakers always indicate true position of breaker mechanism, and provide positive safety and dependability.

Instead of having a handle and complicated, linkage to the breaker, the door of Federal Pacific Enclosed Circuit Breakers has a trouble-free cut out.





In normal operating position, the handle of the breaker extends through the cut out, ready for instant use.

1963 FPE
Ready Reference

Circuit Breakers with Enclosure

Frame Breaker	Rating Amps	COMPLETE DEVICE ● Cat. No. 2 Pole	COMPLETE DEVICE ● Cat. No. 3 Pole	Circuit Breaker Only 2 Pole Cat. No.	Circuit Breaker Only 2 Pole List Price	Circuit Breaker Only 3 Pole Cat. No.	Circuit Breaker Only 3 Pole List Price	NEMA 1A Dust Resisting Enclosure Only ▲ 2 and 3 Pole Cat. No.	NEMA 1A Dust Resisting Enclosure Only ▲ 2 and 3 Pole List Price
Plug-In STABreaker® (Toggle Handle)									
NE-S 100 Amp 240 Volts A.C. 125/250 Volts D.C.	15	BE22015	BE23015	2215	$ 28.00	2315	$ 41.00	2400* Shipping Weight 16 lbs.	$13.00
	20	BE22020	BE23020	2220	28.00	2320	41.00		
	30	BE22030	BE23030	2230	28.00	2330	41.00		
	40	BE22040	BE23040	2240	28.00	2340	41.00		
	50	BE22050	BE23050	2250	28.00	2350	41.00		
	70	BE22070	BE23070	2270	46.00	2370	60.00		
	100	BE22100	BE23100	2200	46.00	2300	60.00		
	100★	BE22100NA	BE23100NA	2200NA	28.00	2300NA	41.00		
NF-S 225 Amp 600 Volts A.C. 250 Volts D.C.	15	BF62015	BF63015	4215	60.00	4315	77.00	2400* Shipping Weight 16 lbs.	$13.00
	20	BF62020	BF63020	4220	60.00	4320	77.00		
	30	BF62030	BF63030	4230	60.00	4330	77.00		
	40	BF62040	BF63040	4240	60.00	4340	77.00		
	50	BF62050	BF63050	4250	60.00	4350	77.00		
	70	BF62070	BF63070	4270	76.00	4370	93.00		
	100	BF62100	BF63100	4200	76.00	4300	93.00		
	100★	BF62100NA	BF63100NA	4200NA	60.00	4300NA	77.00		
Fixed Mounted Rotary Handle Circuit Breakers									Nema 12** and Nema 1A
NEF-R 100 Amp 480 Volts A.C. 125/250 Volts D.C.	15	BEF42015	BEF43015	NEF421015R	51.00	NEF431015R	65.00	4100* Shipping Weight 14 lbs.	$21.00
	20	BEF42020	BEF43020	NEF421020R	51.00	NEF431020R	65.00		
	30	BEF42030	BEF43030	NEF421030R	51.00	NEF431030R	65.00		
	40	BEF42040	BEF43040	NEF421040R	51.00	NEF431040R	65.00		
	50	BEF42050	BEF43050	NEF421050R	51.00	NEF431050R	65.00		
	70	BEF42070	BEF43070	NEF421070R	65.00	NEF431070R	79.00		
	100	BEF42100	BEF43100	NEF421100R	65.00	NEF431100R	79.00		
	100★	BEF42100NA	BEF43100NA	NEF421100RNA	46.00	NEF431100RNA	60.00		
NFJ-R 225 Amp 600 Volts A.C. 250 Volts D.C.	70	BFJ62070	BFJ63070	NFJ621070R	76.00	NFJ631070R	93.00	4225* Shipping Weight 16 lbs.	$35.00
	100	BFJ62100	BFJ63100	NFJ621100R	76.00	NFJ631100R	93.00		
	125	BFJ62125	BFJ63125	NFJ621125R	170.00	NFJ631125R	210.00		
	150	BFJ62150	BFJ63150	NFJ621150R	170.00	NFJ631150R	210.00		
	175	BFJ62175	BFJ63175	NFJ621175R	170.00	NFJ631175R	210.00		
	200	BFJ62200	BFJ63200	NFJ621200R	170.00	NFJ631200R	210.00		
	225	BFJ62225	BFJ63225	NFJ621225R	170.00	NFJ631225R	210.00		
	225★	BFJ62225NA	BFJ63225NA	NFJ621225RNA	135.00	NFJ631225RNA	170.00		
NJL-R 400 Amp 600 Volts A.C. 250 Volts D.C.	70	BJL62070	BJL63070	NJL621070R	190.00	NJL631070R	234.00	4400† Shipping Weight 33 lbs.	$62.00
	100	BJL62100	BJL63100	NJL621100R	190.00	NJL631100R	234.00		
	125	BJL62125	BJL63125	NJL621125R	190.00	NJL631125R	234.00		
	150	BJL62150	BJL63150	NJL621150R	190.00	NJL631150R	234.00		
	175	BJL62175	BJL63175	NJL621175R	190.00	NJL631175R	234.00		
	200	BJL62200	BJL63200	NJL621200R	190.00	NJL631200R	234.00		
	225	BJL62225	BJL63225	NJL621225R	190.00	NJL631225R	234.00		
	250	BJL62250	BJL63250	NJL621250R	300.00	NJL631250R	364.00		
	300	BJL62300	BJL63300	NJL621300R	300.00	NJL631300R	364.00		
	350	BJL62350	BJL63350	NJL621350R	300.00	NJL631350R	364.00		
	400	BJL62400	BJL63400	NJL621400R	300.00	NJL631400R	364.00		
	400★	BJL62400NA	BJL63400NA	NJL621400RNA	227.00	NJL631400RNA	273.00		
NM-R 800 Amp 600 Volts A.C. 250 Volts D.C.	125	BM62125	BM63125	NM621125R	330.00	NM631125R	400.00	4800‡ Shipping Weight 80 lbs.	$117.00
	150	BM62150	BM63150	NM621150R	330.00	NM631150R	400.00		
	175	BM62175	BM63175	NM621175R	330.00	NM631175R	400.00		
	200	BM62200	BM63200	NM621200R	330.00	NM631200R	400.00		
	225	BM62225	BM63225	NM621225R	330.00	NM631225R	400.00		
	250	BM62250	BM63250	NM621250R	330.00	NM631250R	400.00		
	300	BM62300	BM63300	NM621300R	330.00	NM631300R	400.00		
	350	BM62350	BM63350	NM621350R	330.00	NM631350R	400.00		
	400	BM62400	BM63400	NM621400R	330.00	NM631400R	400.00		
	500	BM62500	BM63500	NM621500R	501.00	NM631500R	636.00		
	600	BM62600	BM63600	NM621600R	501.00	NM631600R	636.00		
	700	BM62700	BM63700	NM621700R	653.00	NM631700R	840.00		
	800	BM62800	BM63800	NM621800R	653.00	NM631800R	840.00		
	800★	BM62800NA	BM63800NA	NM621800RNA	336.00	NM631800RNA	417.00		

* Insulated Groundable Neutral included at no extra cost.

† Insulated Groundable Neutral Catalog #66 $11.00. Shipping weight 3 lbs.

‡ Insulated Groundable Neutral Catalog #88 $18.00. Shipping weight 4 lbs.

★ Non-Automatic Circuit Interrupter.

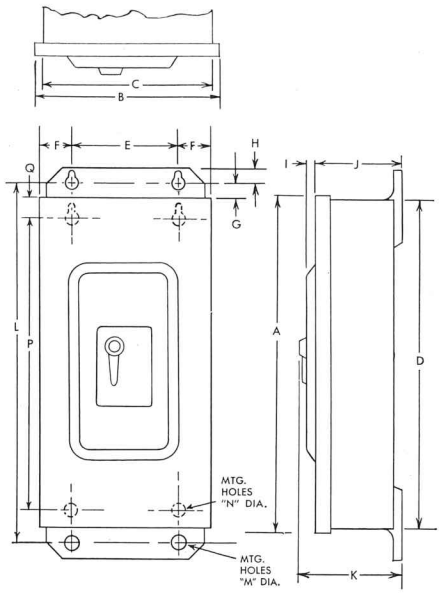
** Standard Nema 12 Enclosures have knockouts, consult factory for enclosures without knockouts.

▲ All Enclosures include breaker mounting screws.

● To determine complete price: add price of breaker to the price of enclosure. All units shipped separately.

Add price of neutral for 400 amp or 800 amp Frame units when required.

Dust Resisting NEMA 1A
NEMA 12†



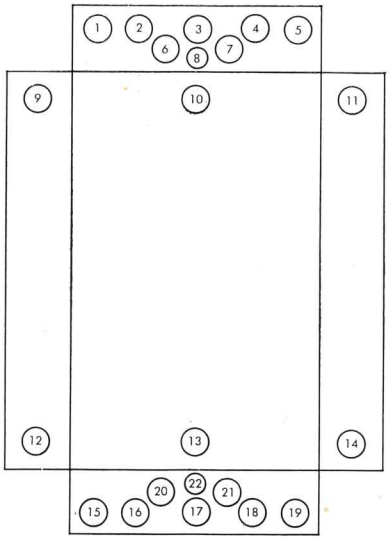
Dimensions

Maximum Breaker Rating	Enclosure Cat. No.	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q
100A., 240V., NE Toggle Handle 100A., 600V., NF Toggle Handle	2400	16	8 1/8	7 7/8	15 3/4	5 7/8	1	—	—	1 3/8	6 1/4	9 1/4	—	—	9/32	13	1
100A., 480V., NEF Rotary Handle	4100	14 3/8	8 1/8	7 7/8	14	6 1/4	13/16	9/16	15/16	21/32	6 13/32	7 5/16	15 1/8	3/4	—	—	—
225A., 600V., NFJ Rotary Handle	4225	21 3/8	11 11/16	11 7/16	21	9 3/16	1 1/4	9/16	15/16	1	6 3/4	8	22 1/8	3/4	—	—	—
400A., 600V., NJL Rotary Handle	4400	28 15/32	16 15/32	16 5/32	28	13 1/2	1 5/16	9/16	15/16	1 1/8	7 7/32	8 19/32	29 1/8	3/4	—	—	—
800A., 600V., NM Rotary Handle	4800	36	18 23/32	18 13/32	35 21/32	14	2 23/64	3 7/64	9/16	1 5/16	6	7 3/4	37 5/32	1/2	—	—	—

Conduit Information

Knockout Locations

A = 2 - 2½ - 3 - 3½ KO
B = ½ - ¾ - 1 KO
C = 1½ - 2 - 2½ - 3 KO
D = ¾ - 1 - 1¼ - 1½ KO
E = 1 - 1¼ - 1½ - 2 KO
F = ½ - ¾ - 1 - 1¼ KO
G = ¾ - 1 - 1¼ KO



Knockout Locations

Maximum Breaker Rating	Enclosure Cat. No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
100A., 240V., NE* 100A., 600V., NF*	2400			E			B	B		F	G	F	F	G	F			E			B	B	
100A., 480V., NEF	4100			E			B	B										E			B	B	
225A., 600V., NFJ	4225			C			D	D										C			D	D	
400A., 600V., NJL	4400			A			C	C										A			C	C	
800A., 600V., NM	4800	A	A		A	A			B							A	A		A	A			B

* Toggle handle.
† Standard NEMA 12 enclosures have knockouts. Consult factory for enclosures without knockouts.

NEMA 3, 4, 5, 7 and NEMA 9 Enclosed Circuit Breakers

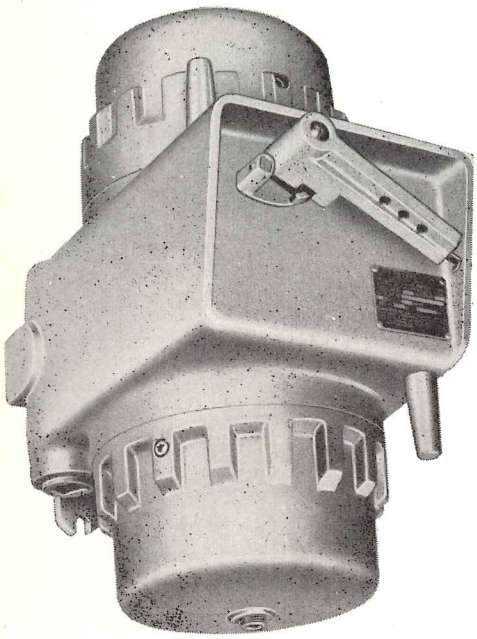
Frame Breaker	Rating Amps	NEMA 3, 4, 5 WATER AND DUST TIGHT AND NEMA 9 CLASS II, GROUPS E, F, & G FOR HAZARDOUS LOCATIONS WITH BOLTED COVER				NEMA 7, CLASS I, GROUP D AND NEMA 9, CLASS II, GROUPS E, F, & G FOR HAZARDOUS LOCATIONS WITH THREADED COVER				Neutral‡ List Price addition
		2 Pole		3 Pole		2 Pole		3 Pole		
		Cat. No.	List Price	Cat. No.	List Price	Cat. No.	List Price	Cat. No.	List Price	
NE 100 Amp 240 Volts A.C. 125/250 Volts D.C.	15	GE22015	$ 79.00	GE23015	$114.00	PE22015	$168.00	PE23015	$181.00	$11.00
	20	GE22020	79.00	GE23020	114.00	PE22020	168.00	PE23020	181.00	
	30	GE22030	79.00	GE23030	114.00	PE22030	168.00	PE23030	181.00	
	40	GE22040	79.00	GE23040	114.00	PE22040	168.00	PE23040	181.00	
	50	GE22050	79.00	GE23050	114.00	PE22050	168.00	PE23050	181.00	
	70	GE22070	128.00	GE23070	142.00	PE22070*	186.00	PE23070*	200.00	
	100	GE22100	128.00	GE23100	142.00	PE22100*	186.00	PE23100*	200.00	
	100★	GE22100NA	79.00	GE23100NA	114.00	PE22100NA*	168.00	PE23100NA*	181.00	
NEF 100 Amp 480 Volts A.C. 125/250 Volts D.C.	15	GEF42015	103.00	GEF43015	138.00	PEF42015	191.00	PEF43015	205.00	$11.00
	20	GEF42020	103.00	GEF43020	138.00	PEF42020	191.00	PEF43020	205.00	
	30	GEF42030	103.00	GEF43030	138.00	PEF42030	191.00	PEF43030	205.00	
	40	GEF42040	103.00	GEF43040	138.00	PEF42040	191.00	PEF43040	205.00	
	50	GEF42050	103.00	GEF43050	138.00	PEF42050	191.00	PEF43050	205.00	
	70	GEF42070	147.00	GEF43070	161.00	PEF42070*	205.00	PEF43070*	219.00	
	100	GEF42100	147.00	GEF43100	161.00	PEF42100*	205.00	PEF43100*	219.00	
	100☆	GEF42100NA	98.00	GEF43100NA	133.00	PEF42100NA*	186.00	PEF43100NA*	200.00	
NF 100 Amp 600 Volts A.C. 250 Volts D.C.	15	GF62015	142.00	GF63015	159.00	PF42015	200.00	PF43015	217.00	$11.00
	20	GF62020	142.00	GF63020	159.00	PF42020	200.00	PF43020	217.00	
	30	GF62030	142.00	GF63030	159.00	PF42030	200.00	PF43030	217.00	
	40	GF62040	142.00	GF63040	159.00	PF42040	200.00	PF43040	217.00	
	50	GF62050	142.00	GF63050	159.00	PF42050	200.00	PF43050	217.00	
	70	GF62070	200.00	GF63070	216.00	PF42070*	216.00	PF43070*	233.00	
	100	GF62100	200.00	GF63100	216.00	PF42100*	216.00	PF43100*	233.00	
	100★	GF62100NA	142.00	GF63100NA	159.00	PF42100NA*	200.00	PF43100NA*	217.00	
NFJ 225 Amp 600 Volts A.C. 250 Volts D.C.	70	GFJ62070	200.00	GFJ63070	216.00	PFJ62070	446.00	PFJ63070	463.00	$15.00
	100	GFJ62100	200.00	GFJ63100	216.00	PFJ62100	446.00	PFJ63100	463.00	
	125	GFJ62125	340.00	GFJ63125	380.00	PFJ62125	540.00	PFJ63125	580.00	
	150	GFJ62150	340.00	GFJ63150	380.00	PFJ62150	540.00	PFJ63150	580.00	
	175	GFJ62175	340.00	GFJ63175	380.00	PFJ62175	540.00	PFJ63175	580.00	
	200	GFJ62200	340.00	GFJ63200	380.00	PFJ62200	540.00	PFJ63200	580.00	
	225	GFJ62225	340.00	GFJ63225	380.00	PFJ62225	540.00	PFJ63225	580.00	
	225★	GFJ62225NA	300.00	GFJ63225NA	340.00	PFJ62225NA	505.00	PFJ63225NA	540.00	
NJL 400 Amp 600 Volts A.C. 250 Volts D.C.	70	GJL62070	379.00	GJL63070	423.00	PJL62070	560.00	PJL63070	604.00	$18.00
	100	GJL62100	379.00	GJL63100	423.00	PJL62100	560.00	PJL63100	604.00	
	125	GJL62125	379.00	GJL63125	423.00	PJL62125	560.00	PJL63125	604.00	
	150	GJL62150	379.00	GJL63150	423.00	PJL62150	560.00	PJL63150	604.00	
	175	GJL62175	379.00	GJL63175	423.00	PJL62175	560.00	PJL63175	604.00	
	200	GJL62200	379.00	GJL63200	423.00	PJL62200	560.00	PJL63200	604.00	
	225	GJL62225	379.00	GJL63225	423.00	PJL62225	560.00	PJL63225	604.00	
	250	GJL62250	780.00	GJL63250	850.00	PJL62250	807.00	PJL63250	871.00	
	300	GJL62300	780.00	GJL63300	850.00	PJL62300	807.00	PJL63300	871.00	
	350	GJL62350	780.00	GJL63350	850.00	PJL62350	807.00	PJL63350	871.00	
	400	GJL62400	780.00	GJL63400	850.00	PJL62400	807.00	PJL63400	871.00	
	400★	GJL62400NA	700.00	GJL63400NA	750.00	PJL62400NA	734.00	PJL63400NA	780.00	

★ Non-Automatic Circuit Interrupter.

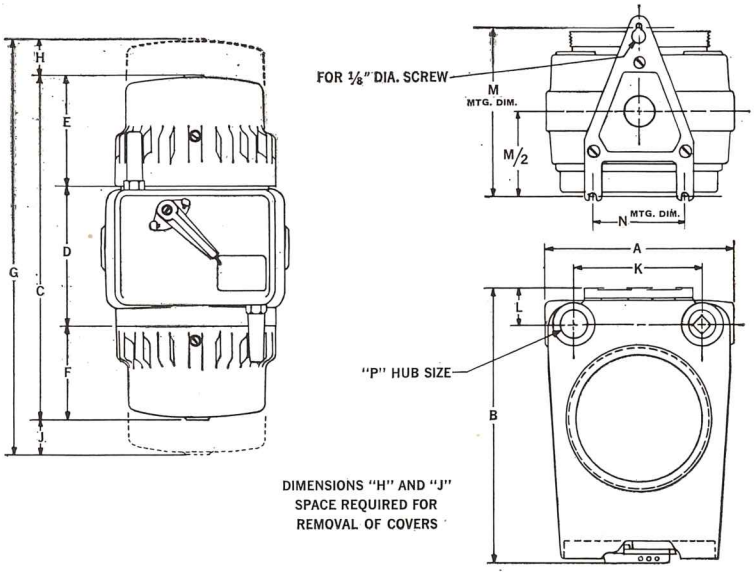
‡ Neutrals must be factory installed. Add suffix "I" to catalog number.

* 1¼" max. conduit opening. For 2" conduit opening, add $21.00 to list price and add suffix "X" to catalog number.

Nema 7 and 9 Enclosed Circuit Breakers



- **INTERLOCKED DOMES**
  For safety in hazardous locations
- **ACME SCREW THREAD CONSTRUCTION**
  For ease of maintenance
- **NATURAL WATER SHEDDING THREADED DOMES**
  For better weather protection
- **ALL ALUMINUM CASTINGS**
  For corrosion resistance and ease of handling
- **EXPOSED HARDWARE OF STAINLESS STEEL**
  For better corrosion resistance
- **RUGGED OPERATING MECHANISMS**
  For reliability and long life
- **HUB TAPPING**
  Tapped for two conduits top and bottom



Dimensions

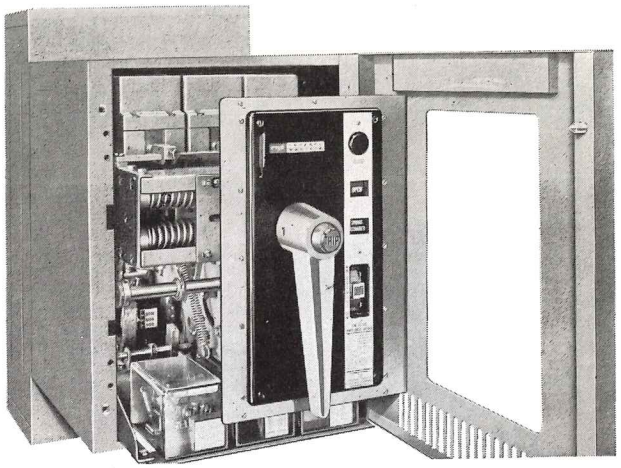
Frame	Form	Hub	A	B	C	D	E	F	G	H	J	K	L	M	N	P
NE, NEF, NF	7	1¼	10⅝	15⅛	19⅜	7⅞	6⅜	5⅛	30⅞	5¾	5¾	7⅜	2	9⅜	5¼	1¼
NE, NEF, NF, NFJ	7	2	12¾	16⅜	19⅜	7⅞	6⅜	5⅛	30⅞	5¾	5¾	9¼	2⅝	9⅜	5¼	2
NFJ, NJL	11	2½	16⅛	20⅛	25½	9	8⅞	7⅝	42	8¼	8¼	12	2⅝	9⅜	5½	2½
NFJ, NJL	11	4	20⅛	23 7/16	25½	9	8⅞	7⅝	42	8¼	8¼	14	4	9⅜	5½	4

CLASS
1575

Wall Mounted FP Air Circuit Breakers

FPE

DRAWOUT TYPE—600 VOLTS A.C. OR LESS



Drawout Wall Mounted Air Circuit Breakers provide adjustable overcurrent protection as well as extended rating selectivity. The dual overcurrent trip devices employ a simple magnetic shunt principle so designed that one coil can cover as many as four different coil ratings. Seven different coils cover 24 ratings and still provide full adjustment from 80 to 160% of each of the 24 ratings. See table below. Breakers are manually or electrically operated, stored energy closed. Stored-energy charging motor operates both on A.C. or D.C. control source.

These breakers are complete with cable pull box for both wall or frame mounting. Wall Mounted FP Air Circuit Breakers are used as service entrance circuit breakers as well as sub-feeders for busways, cranes, capacitors, and welding circuits.

STANDARD RATINGS OF FP LOW-VOLTAGE BREAKERS

Breaker Type	NEMA Continuous Current Rating — Amperes	Voltage	INTERRUPTING RATING CURRENT MEASURED AT ½ CYCLE AFTER FAULTS, AMPERES		Frame Size Continuous Current Rating of Current Carrying Parts Without Series Trips	LIST PRICE—3 POLE	
			Asymmetrical	Symmetrical		Manually Operated	Electrically Operated
FP25-600	15, 20, 30, 40, 50, 70, 90, 100 125, 150, 175, 200, 225, 250, 300 350, 400, 500, 600	600-481 480-241 240 and Below	25,000 35,000 50,000	22,000 30,000 42,000	600	**$ 415.00**	**$ 675.00**
FP50-800	40, 50, 70, 90, 100, 125, 150, 175, 200 225, 250, 300, 400, 500, 600, 800	600-481 480-241 240 and Below	50,000 60,000 75,000	42,000 50,000 65,000	800	**635.00**	**895.00**
FP50-2000	100, 125, 150, 175, 200, 225, 250, 300 350, 400, 500, 600, 800, 1000, 1200, 1600, 2000	600-481 480-241 240 and Below	50,000 60,000 75,000	42,000 50,000 65,000	2000	**1505.00**	**2050.00**

ACCESSORIES

Accessories for all Circuit Breakers*	List Price
Auxiliary Switch, four contacts Specify number of NO and NC	**$ 50.00**
Alarm Switch, hand reset	**75.00**
Undervoltage Trip Attachment Specify 60 Cycle A.C. Voltage Instantaneous† Time Delay	 **70.00** **115.00**
Shunt Trip or Closing Release Attachment, for manually operated breakers Specify A.C. or D.C. and Voltage	**75.00**
Selective Trip, Per Breaker. Not available on FP25-600	**100.00**
Control Switch and Indicating Lamps, for remote mounting	**60.00**
Neutral Stud; for 4-wire service	**70.00**
Key Interlock (Kirk)	**90.00**

* Price are for devices installed at the factory.
† Can be furnished on electrically operated breaker in place of shunt trip at no change in selling price.

RANGES OF DUAL MAGNETIC OVERCURRENT TRIP DEVICE FOR FP BREAKERS

Breaker Type	Maximum Continuous Coil Rating		Adjustable Long Time Delay Pick Up Settings				
	FPE	Conventional	80%	100%	120%	140%	160%
FP25-600 FP50-800 FP50-2000	20	15 20	12 16	15 20	18 24	21 28	24 32
FP25-600 FP50-800 FP50-2000	50	30 40 50	24 32 40	30 40 50	36 48 60	42 56 70	48 64 80
FP25-600 FP50-800 FP50-2000	125	70 90 100 125	55 72 80 100	70 90 100 125	84 108 120 150	98 126 140 175	112 144 160 200
FP25-600 FP50-800 FP50-2000	225	150 175 200 225	120 140 160 180	150 175 200 225	180 210 240 270	210 245 280 315	240 280 320 360
FP25-600 FP50-800 FP50-2000	400	250 300 350 400	200 240 280 320	250 300 350 400	300 360 420 480	350 420 490 560	400 480 560 640
FP25-600* FP50-800 FP50-2000	800	500 600 800	400 480 640	500 600 800	600 720 960	700 840 1120	800 960 1280
FP50-2000	2000	1000 1200 1600 2000	800 960 1280 1600	1000 1200 1600 2000	1200 1440 1920 2400	1400 1680 2240 2800	1600 1920 2560 3200

* Max. rating 600 amp.

Ordering Information:

For Circuit Breakers

Type—FP25-600, FP50-800, FP50-2000
No. of Poles—2 or 3.
Type of Circuit—A.C. (60 cycle) specify voltage.
Ampere Rating—Shown in table above.
Cable Lugs—Supplied to match trip unit amperes unless specified otherwise.
Type of Series Trip—Dual overcurrent trip is standard. Selective trip at additional cost.
Operation—Manual or electrical, stored energy.

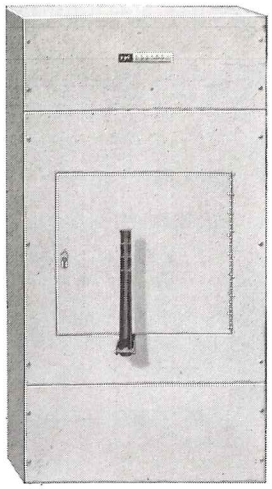
For Electrical Operation

Spring Charging Motor—Specify whether A.C. or D.C. and voltage which may be different than voltage on main contacts. A.C. only on FP25-600.

Shunt Trip—Specify whether A.C. or D.C. and voltage which may be different than voltage on main contacts.

Adapter Details for Bus Duct—Refer to Factory.

Bolted Pressure Contact Switches



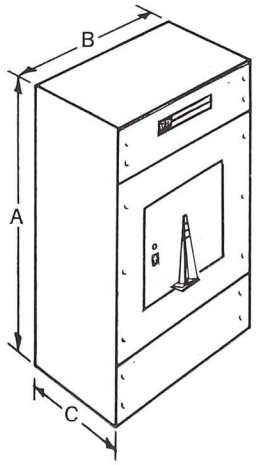
The Bolted Pressure Contact Switch is used in applications having continuous currents up to 5,000 amperes and available fault currents of 100,000 amperes. Bolted silver-plated contacts reduce heating and give mechanical rigidity to the switch. Current limiting fuses reduce let-through fault currents to safe values.

SERVICE VOLTAGE —250—600 Volts, A.C.

RATINGS —1200 to 5000 amperes.
Manually operated with external operating handle.

ENCLOSURE —General Purpose—Ventilated.

FUSES —Current Limiting Type Fuse.
(Not included in price)



Dimensions

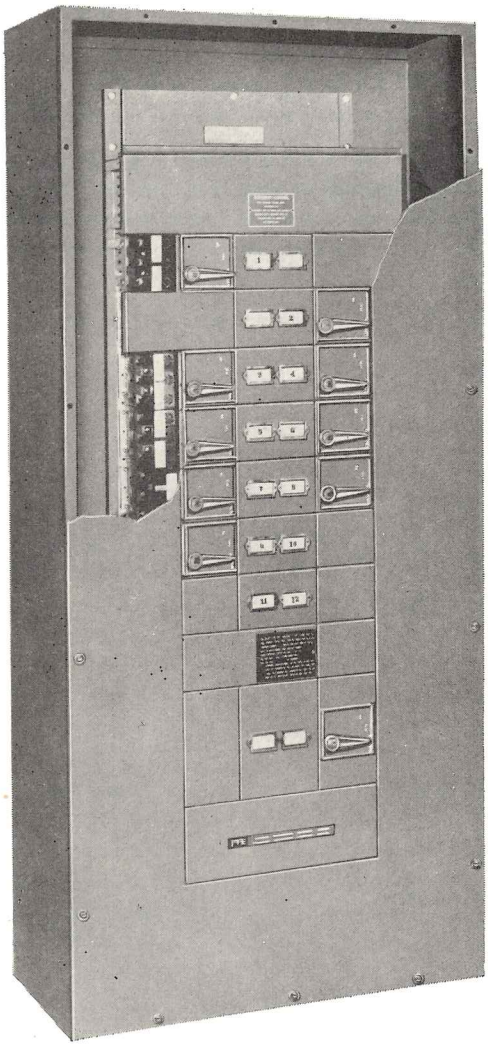
Rating Ampere	250 VOLT 3P. 3W			250 VOLT 3P. 4W			600 VOLT 3P. 3W			600 VOLT 3P. 4W		
	A	B	C	A	B	C	A	B	C	A	B	C
1200	71	31	19	71	36	19	71	32½	19	71	37½	19
1600	71	33	19	71	37	19	71	34½	19	71	38½	19
2000	75	35	20	75	38	20	75	39½	20	75	42½	20
2500	77	37	23	77	40	23	77	41½	23	77	44½	23
3000	82	43½	28	82	45	28	82	47½	28	82	49	28
4000	84	47	34	84	48	34	84	49	34	84	50	34
5000	84	51	34	84	51	34	84	51	34	84	51	34

LIST PRICES—of switches and fuses

Rating Ampere	3 POLE—3 WIRE			3 POLE—4 WIRE			CURRENT LIMITING FUSE Price Each Installed
	Catalog No.†	Price	Weight	Catalog No.	Price	Weight	
250 VOLTS, A.C.—Without Arc Chutes							
1200	1232SIE	$ 770.00	550	1242SIE	$ 830.00	600	$ 57.00
1600	1632SIE	810.00	600	1642SIE	890.00	650	77.00
2000	2032SIE	860.00	700	2042SIE	950.00	750	96.00
2500	2532SIE	1,010.00	1000	2542SIE	1,110.00	1050	120.00
3000*	3032SIE	1,620.00	1400	3042SIE	1,780.00	1450	143.00
4000*	4032SIE	2,120.00	1700	4042SIE	2,220.00	1750	191.00
5000*	5032SIE	2,650.00	2100	5042SIE	2,780.00	2150	238.00
600 VOLTS, A.C.—With Arc Chutes							
1200	1236SIE	$ 940.00	900	1246SIE	$1,000.00	950	$ 57.00
1600	1636SIE	990.00	975	1646SIE	1,070.00	1000	77.00
2000	2036SIE	1,050.00	1050	2046SIE	1,140.00	1100	96.00
2500	2536SIE	1,155.00	1300	2546SIE	1,220.00	1350	120.00
3000*	3036SIE	2,170.00	1850	3046SIE	2,330.00	1850	143.00
4000*	4036SIE	2,900.00	2250	4046SIE	3,000.00	2300	191.00
5000*	5036SIE	3,950.00	2700	5046SIE	4,080.00	2750	238.00

* 3000 Amp. to 5000 Amp. Price based on furnishing steel enclosures. However, aluminum enclosures may be substituted at a 10% addition.
† For unfused switches, add suffix "U" to catalog number and deduct: 1200 to 2000A, $30.00
Price 2 Pole switches at 90% of 3 Pole price. 2500 to 5000A, 50.00
Cable connectors are not included.
Terminal drillings are included.
Add for fuses separately.

Rotary Handle Circuit Breaker Distribution Panelboards



Type CDP Convertible Panelboards are designed and constructed to provide users many exclusive and beneficial features.

Space saving depth. Type CDP Panelboards have a depth of only 8¾" even when 1200 amp bus or 800 amp circuit breakers are used.

Exclusive rotary handle circuit breakers permit easier operation of breakers, direct locking of the breaker handle, and ready determination from a distance of whether the breaker is "On" or "Off".

Cooler operation is secured by use of oversized extruded connectors to eliminate heat-producing joints.

Complete steel dead front. No phenolic to be broken.

Bolted link connectors. All circuit breakers are connected to the bus bars with formed or extruded copper links bolted directly to the panelboard bus bars. These formed links reduce heating because they have no joints. The entire interior is built upon rigid channel mounting rails.

Complete breaker flexibility. All circuit breakers are built on the same module for maximum interchangeability. To facilitate conversion from one frame to another in a CDP panel, kits containing connecting straps and necessary hardware are available.

Neutrals are furnished with solderless connectors for use with copper or aluminum wire.

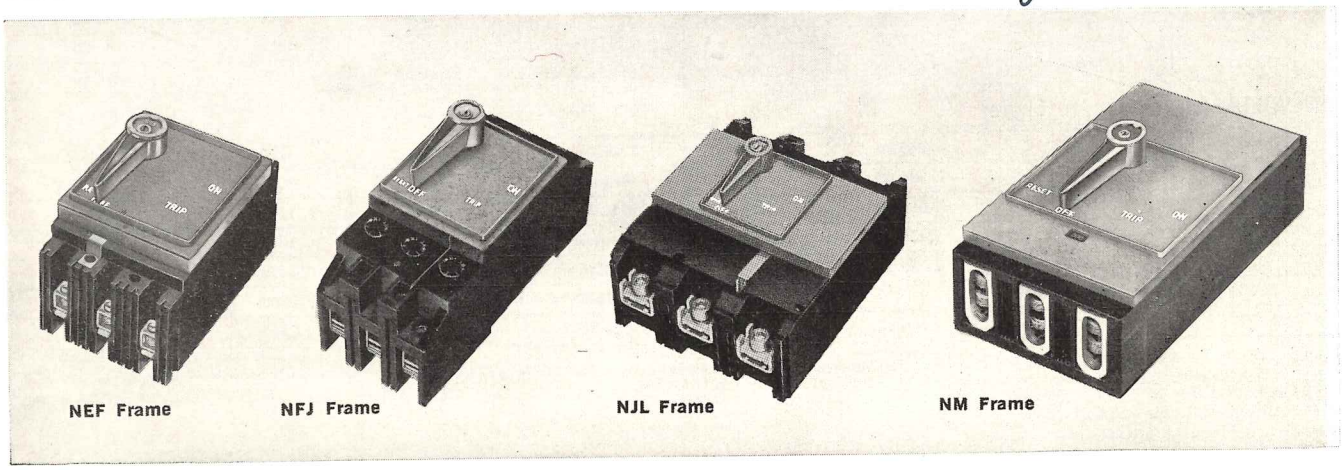
Bussing consists of pre-drilled and tapped high-conductivity copper for maximum flexibility.

Indicating trim clamps provide quick, easy trim installation and removal. Trim can be aligned without necessitating its removal from the box.

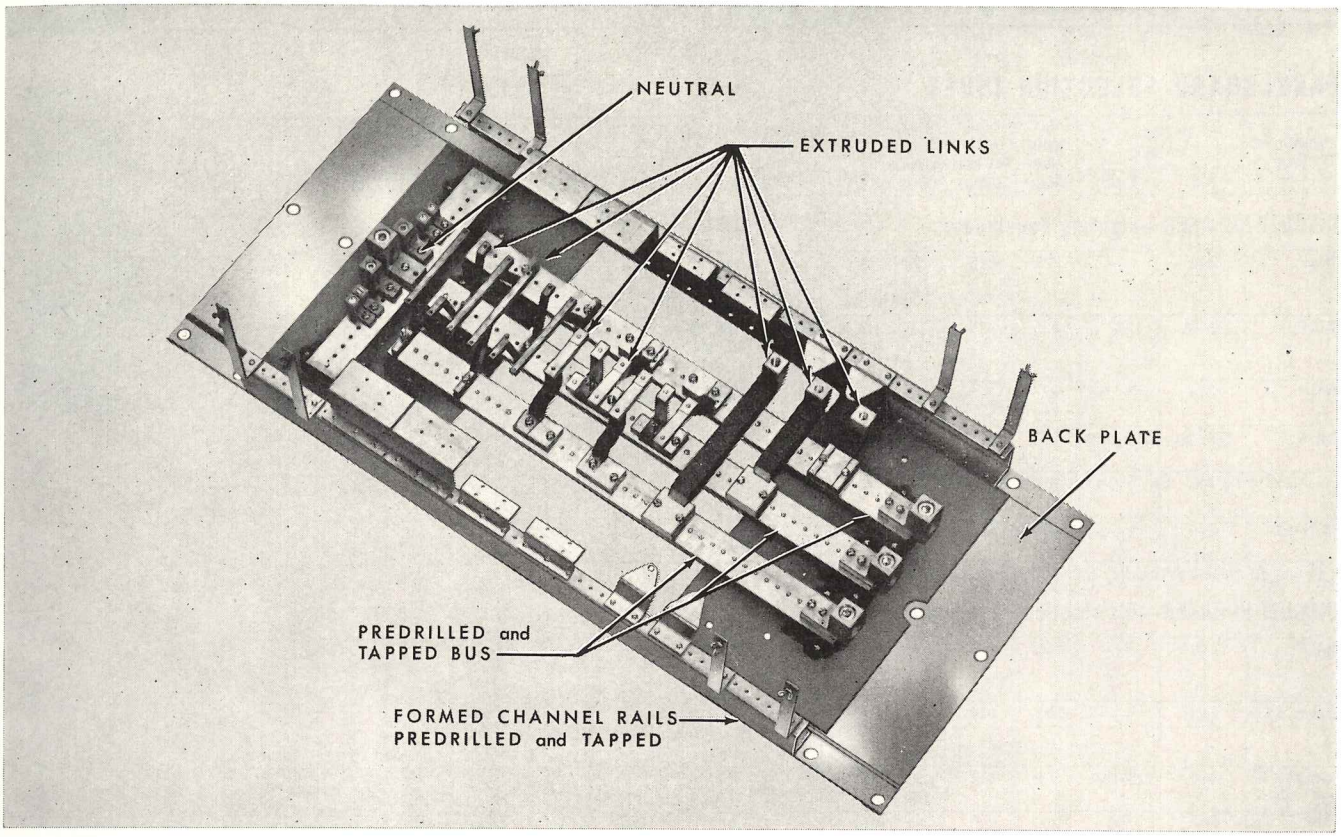
Attractive enclosures. Trim and box are appointed with the most modern hardware. Trim is of heavy gauge sheet steel with durable gray enamel over phosphatized primer. Box is constructed of heavy gauge galvanized steel. Main lugs accept both copper and aluminum lugs. Indicating trim clamps provide easy trim installation, alignment, and removal.

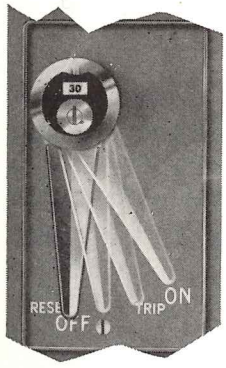
CIRCUIT BREAKER MAIN AND BRANCH DISCONNECTS

FPE Redi-reference 4-63 p.44

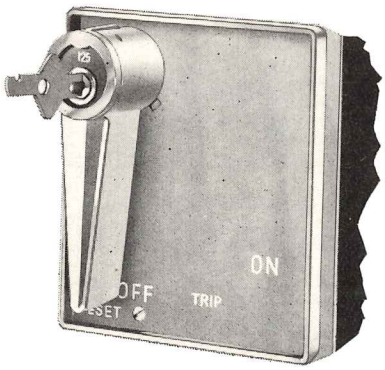


NEF Frame NFJ Frame NJL Frame NM Frame



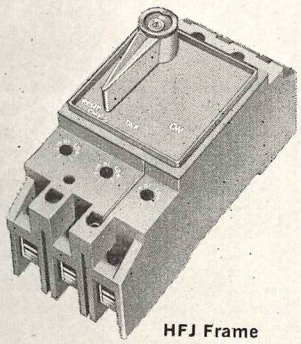


Rotary handle operation based upon the leverage principle—makes breaker operation quick and effortless.

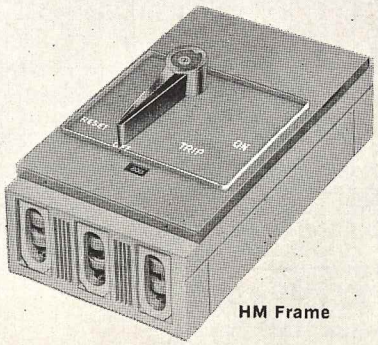


Cylinder lock in handle locks breaker "On" or "Off." Eliminates the use, if desired, of padlocks.

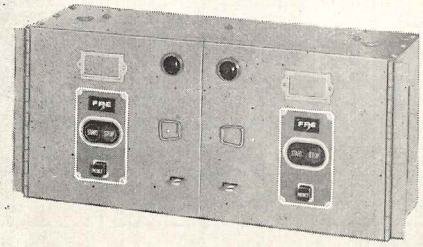
Retractable locking ring on handle holds as many as 3 padlocks and enables breaker to be locked in "On" or "Off" position.



HFJ Frame



HM Frame



PMS Motor Starter units make CDP panelboard a motor control center as well. Starters through size 4 accommodated.

FPE Redi-reference 9-63

Lighting and Distribution Panelboard Selection Chart and Index

FPE

PANELBOARD SELECTION INDEX

Panelboard Type	Maximum Voltage A.C.	Maximum Voltage D.C.	Max. Main Bus (Amp)	Max. Main Breaker (Amp)	Max. Branch Circuit (Amp)	Ckt. Breaker Type	No. of Poles	Voltage Rating A.C.	Voltage Rating D.C.	INTERRUPTING RATING (NEMA) A.C. 120 V.	A.C. 240 V.	A.C. 480 V.	A.C. 600 V.	D.C. 125 V.	D.C. 250 V.	Fed. Spec. WP-131A	Page No.
CIRCUIT BREAKER—Lighting Panelboards																	
NALP	240	—	225	225	50 100 100	NA	1 2 3	120/240 120/240 240	— — —	5M 5M —	— — 5M	— — —	— — —	— — —	— — —	A1 A2 A5	47 48
NBLP	240	—	225	225	50 100 100	NB	1 2 3	120/240 120/240 240	— — —	5M 5M —	— — 5M	— — —	— — —	— — —	— — —	A1 A2 A5	49
NA1B	240	125/250	225	225	50	NEF*	1 2, 3	120/240 240	125 125/240	15M —	— 20M	— —	— —	10M 10M	— —	C1 C2, C3	52
NH1B	277/480	125/250	225	225	50	NEF	1 2, 3	277 480	125 125/250	15M —	10M① 20M	— 15M	— —	10M 10M	— —	C1, D1 C2, C3, E	53
NALP-LX	240	—	200	100	50 50	NA	1, 2 3	120/240 240	— —	5M —	— 5M	— —	— —	— —	— —	A1, A2 A5	50
NBLP-LX	240	—	200	100	50 50	NB	1, 2 3	120/240 240	— —	5M —	— 5M	— —	— —	— —	— —	A1, A2 A5	51

* 15 and 20 Ampere Rating NE Frame 7500 AIC @ 120V.

CIRCUIT BREAKER—Distribution Panelboards

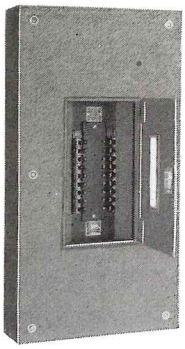
NALP	240	—	600	400	50 100 100	NA	1 2 3	120/240 120/240 240	— — —	5M 5M —	— — 5M	— — —	— — —	— — —	— — —	A1 A2 A5	54 55
NBLP	240	—	600	400	50 100 100	NB	1 2 3	120/240 120/240 240	— — —	5M 5M —	— — 5M	— — —	— — —	— — —	— — —	A1 A2 A5	56
NHDP	480	125/250	600	400	50 100	NEF-R	1 2, 3	277 480	125 125/250	15M —	10M① 20M	— 15M	— —	10M 10M	— —	C1,C2,C3,D1 E, D②	58 59
CDP	600	250	1200	800	50 100 100 225 400 800	NEF-R NEF-R NF-R NFJ-R NJL-R NM-R	1 2, 3 2, 3 2, 3 2, 3 2, 3	277 480 600 600 600 600	125 125/250 250 250 250 250	15M — — — — —	10M① 20M 20M 30M 40M 50M	— 15M 15M 25M 25M 35M	— — 15M 15M 25M 25M	10M 10M — — — —	— — 10M 10M 10M 20M	C1,C2,C3,D1 E, D② D, E D, E D, E D, E	60 61
STABreaker	600	250	600	400	20 100 100 400	NC-S NE-S NF-S NJ-S	1 2, 3 2, 3 2, 3	120 240 600 600	— 125/250 250 250	5M — — —	— 7.5M 20M 25M	— — 15M 20M	— — 15M 15M	— 5M — —	— — 10M 10M	A1 C2, C3 D, E D, E	57

Panelboard Type	Maximum Voltage A.C.	Maximum Voltage D.C.	Max. Main Bus (Amp)	Max. Branch Circuit (Amp)	Type of Fusible Device	Device Rating (Amp)	No. of Poles	VOLTAGE RATINGS Single A.C.	Single D.C.	Twin A.C.	Twin D.C.	Fed. Spec.	Page No.
FUSIBLE—Lighting Panelboards													
NT1P	120/240	125/250	200	30	Toggle Sw. and Fuse③	30	1	120/240	125	—	—	WP-146	62
FUSIBLE—Distribution Panelboards													
Flexunit	600	250	600	200	Plug in Pull switch Units	30/30 30/60 60/60 100 100/100 200	2, 3 2, 3 2, 3 2, 3 2, 3 2, 3	— — — 240 or 600 — 240	— — — 250 — 250	240 or 600 240 or 600 240 or 600 — 240 —	250 250 250 — 250 —	WP-146	63
Narrow QMQB	240	250	600	100	Front Operated Switch	30/30 60/60 30, 60, 100	2, 3 2, 3 2, 3	— — 240	— — 250	240 240 —	250 250 —	WP-146	66
Convertible QMQB	600	250	1200	1200	Front Operated Switch	30/30 60/60 100/100 30, 60, 100 200, 400, 600 800, 1200	2, 3 2, 3 2, 3 2, 3 2, 3 2, 3	— — — 240 or 600 240 or 600 240 or 600	— — — 250 250 250	240 or 600 240 or 600 240 — — —	250 250 250 — — —	WP-146	64 65

① 277V. rating.
② Except voltage rating is 480 Volts.
③ Furnished in 4 section block only.

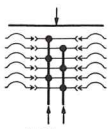
unassembled Circuit Breaker Lighting Panelboards

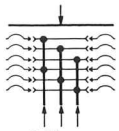
WITH TYPE NA PLUG-IN THERMAL-MAGNETIC BRANCH BREAKERS



Type NALP

1ø 3W. S/N, 120/240 volts, A.C.
3ø 4W. S/N, 120/208 volts, A.C.
3ø 3W. S/N, 240 volts, A.C.


1 Phase 3 Wire


3 Phase 4 Wire

BRANCHES: Single pole, 120 volts, A.C.
(See footnote for 2 and 3 pole, common trip circuit breakers).

BOXES: Galvanized steel, 16″ wide by 4¾″ except 225 amp main breaker panel which is 6″ deep.

GUTTERS: 4″ side, 5″ end (minimum).

TRIMS: Front and door with semi-flush lock. Finish light gray enamel.

NALP Basic Enclosures Only—No Type NA Circuit Breakers Included. Flush Enclosure Furnished Unless Otherwise Specified.

Max. No. Poles	Main Amp Cap.	BASIC ENCLOSURE & TRIM Catalog Number	List Price	Ship. Wt.	Box Ht. In.	SEPARATE TRIM ONLY Cat. No. Flush* Surface**	List Price	Ship. Wt.
Mains: 1-Phase, 3-Wire, Lugs Only								
12	100	NALP12-3L-BE	**$76.00**	42	24	1624	**$24.00**	20
24	100	NALP24-3L-BE	**101.00**	50	30	1630	**26.00**	23
32	225	NALP32-3L-BE	**113.00**	66	33	1633	**31.00**	27
42	225	NALP42-3L-BE	**128.00**	76	39	1639	**33.00**	31
Mains: 1-Phase, 3-Wire, 2-Pole Circuit Breaker ●								
12	70	NALP12-3AB-BE	**109.00**	44	27	1627	**26.00**	20
20	100	NALP20-3AB-BE	**144.00**	65	30	1630	**31.00**	27
32	225	NALP32-3AB-BE	**318.00**	97	45	1645	**41.00**	40
42	225	NALP42-3AB-BE	**333.00**	107	51	1651	**45.00**	44

* Flush—Prefix "TF"
** Surface—Prefix "TS"
● Breaker frame listed in Table 2, Page 67.

Max. No. Poles	Main Amp Cap.	BASIC ENCLOSURE & TRIM Catalog Number	List Price	Ship. Wt.	Box Ht. In.	SEPARATE TRIM ONLY Cat. No. Flush* Surface**	List Price	Ship. Wt.
Mains: 3-Phase, 4-Wire, Lugs Only								
12	100	NALP12-4L-BE	**$86.00**	44	24	1624	**$24.00**	20
20	100	NALP20-4L-BE	**101.00**	50	30	1630	**26.00**	23
30	100	NALP30-4L-BE	**116.00**	66	33	1633	**31.00**	27
42	225	NALP42-4L-BE	**141.00**	80	39	1639	**33.00**	31
Mains: 3-Phase, 4-Wire, 3-Pole Circuit Breaker ●								
12	50	NALP12-4AB-BE	**134.00**	50	27	1627	**26.00**	23
18	100	NALP18-4AB-BE	**167.00**	66	30	1630	**31.00**	27
30	100	NALP30-4AB-BE	**185.00**	81	39	1639	**33.00**	31
42	225	NALP42-4AB-BE	**393.00**	116	51	1651	**45.00**	44

NALP Panel Assemblies—*Pricing Table Including Breakers (Unassembled).

Total No. of Breaker Poles	1 PHASE, 3 WIRE SOLID NEUTRAL Main Lugs Only	Fillers	Main 2 Pole Breaker	Fillers	3 PHASE, 4 WIRE SOLID NEUTRAL Main Lugs Only	Fillers	Main 3 Pole Breaker	Fillers
4	**$ 88.40**	8	**$121.40**	8	—		—	
6	**94.60**	6	**127.60**	6	**$104.60**	6	**$152.60**	6
8	**100.80**	4	**133.80**	4	**110.80**	4	**158.80**	4
10	**107.00**	2	**140.00**	2	**117.00**	2	**165.00**	2
12	**113.20**	0	**146.20**	0	**123.20**	0	**171.20**	0
14	**144.40**	10	**187.40**	6	**144.40**	6	**210.40**	4
16	**150.60**	8	**193.60**	4	**150.60**	4	**216.60**	2
18	**156.80**	6	**199.80**	2	**156.80**	2	**222.80**	0
20	**163.00**	4	**206.00**	0	**163.00**	0	**247.00**	10
22	**169.20**	2	**386.20**	10	**184.20**	8	**253.20**	8
24	**175.40**	0	**392.40**	8	**190.40**	6	**259.40**	6
26	**193.60**	6	**398.60**	6	**196.60**	4	**265.60**	4
28	**199.80**	4	**404.80**	4	**202.80**	2	**271.80**	2
30	**206.00**	2	**411.00**	2	**209.00**	0	**278.00**	0
32	**212.20**	0	**417.20**	0	**240.20**	10	**492.20**	10
34	**233.40**	8	**438.40**	8	**246.40**	8	**498.40**	8
36	**239.60**	6	**444.60**	6	**252.60**	6	**504.60**	6
38	**245.80**	4	**450.80**	4	**258.80**	4	**510.80**	4
40	**252.00**	2	**457.00**	2	**265.00**	2	**517.00**	2
42	**258.20**	0	**463.20**	0	**271.20**	0	**523.20**	0

* List prices based on single pole Type NA circuit Breakers and Fillers.

CIRCUIT BREAKERS

Amp	SINGLE POLE Cat. No. NA	List Price	DOUBLE POLE Cat. No. NA	List Price	THREE POLE Cat. No. NA	List Price
15	15	**$3.10**	215	**$ 6.90**	3P15	**$22.00**
20	20	**3.10**	220	**6.90**	3P20	**22.00**
30	30	**3.10**	230	**6.90**	3P30	**22.00**
40	40	**3.10**	240	**6.90**	3P40	**22.00**
50	50	**3.10**	250	**6.90**	3P50	**22.00**
60			2P60	**6.90**		
70			2P70	**13.00**	3P70	**28.00**
100			2P100	**17.60**	3P100	**32.00**

CIRCUIT BREAKERS—SWITCHED NEUTRAL

Amp	2 WIRE SWITCHING NEUTRAL Cat. No.	List Price	3 WIRE SWITCHING NEUTRAL Cat. No.	List Price
15	N215	**$9.10**	L3P15	**$22.00**
20	N220	**9.10**	L3P20	**22.00**
30	N230	**9.10**	L3P30	**22.00**

ACCESSORIES

Description	Catalog No.	List Price
Filler Plate	E51478-3	**$ .30**
Handle Tie	HTNA	**.10**
1 Pole Lockoff—Non-Padlocking	1LOK	**.70**
2 Pole Lockoff—Padlocking	2LOK	**.70**
3 Pole Lockoff—Padlocking	3LOK	**.70**
Subfeed Lug Kit (100A)	SFL-100	**20.00**
Subfeed Lug Kit (200A)	SFL-200	**24.00**

COMMON TRIP BREAKERS, TYPE NA

Price Panels on basis of one pole breakers for:
2 Pole (15-60A.) add $0.70 to Two 1 Pole Breakers.
2 Pole (70A.) add $6.80 to Two 1 Pole Breakers.
2 Pole (90, 100A.) add $5.20 to Four 1 Pole Breakers.
3 Pole (15-50A.) add $12.70 to Three 1 Pole Breakers.
3 Pole (70A.) add $18.70 to Three 1 Pole Breakers.
3 Pole (100A.) add $13.40 to Six 1 Pole Breakers.

CLASS

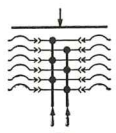
1600 Circuit Breaker Lighting Panelboards factory assembled

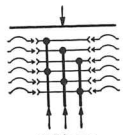
FPE

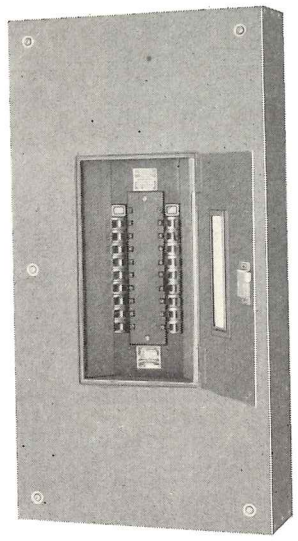
WITH TYPE NA PLUG-IN THERMAL-MAGNETIC BRANCH BREAKERS

Type NALP

1ø 3W. S/N, 120/240 volts, A.C.
3ø 4W. S/N, 120/208 volts, A.C.
3ø 3W. 240 volts, A.C.


1 Phase 3 Wire


3 Phase 4 Wire



BRANCHES: 15 amp, 120 volt, single pole, type NA circuit breakers, 20, 30, 40, and 50 ampere breakers available at no extra cost. *See footnotes for 2 and 3 pole, common trip circuit breakers.

BOXES: Code gauge galvanized steel, 16″ wide by 4¾″ deep except 225A main breaker panels which are 6″ deep.

GUTTERS: Minimum 4″ side and 5″ end.

TRIMS: Code gauge steel, phosphatized and finished in gray enamel. Flush or surface mounting trims are available.
Flush fronts will be furnished unless otherwise specified.

FEDERAL GOVERNMENT SPECIFICATIONS: These panelboards meet the requirements of WP131A, Amendment No. 2, Class A.

* Increase of bus bar rating should be considered when branch circuit breaker ratings exceed 15 amps. Bus rating limited to 225 amps maximum.

Mains: 1-Phase, 3-Wire, Lugs Only

No. of Poles	Ampere Mains	Catalog Number	List Price	Box Height	Approx. Shipping Weight	Box Catalog Number
8	100	NALP08-3L	$105.00	24″	45	B41624
10	100	NALP10-3L	116.00		45	B41624
12	100	NALP12-3L	127.00		53	B41624
14	100	NALP14-3L	138.00	30″	54	B41630
16	100	NALP16-3L	149.00		55	B41630
18	100	NALP18-3L	160.00		55	B41630
20	100	NALP20-3L	171.00		56	B41630
22	225	NALP22-3L	186.00		72	B41630
24	225	NALP24-3L	197.00		73	B41630
26	225	NALP26-3L	208.00	33″	73	B41633
28	225	NALP28-3L	219.00		73	B41633
30	225	NALP30-3L	230.00		74	B41633
32	225	NALP32-3L	241.00		75	B41633
34	225	NALP34-3L	252.00	39″	85	B41639
36	225	NALP36-3L	263.00		86	B41639
38	225	NALP38-3L	274.00		86	B41639
40	225	NALP40-3L	285.00		87	B41639
42	225	NALP42-3L	296.00		89	B41639

Mains: 1-Phase, 3-Wire, 2-Pole Circuit Breaker •

No. of Poles	Ampere Mains	Catalog Number	List Price	Box Height	Approx. Shipping Weight	Box Catalog Number
8	70	NALP08-3AB	$138.00	27″	53	B41627
10	70	NALP10-3AB	149.00		53	B41627
12	70	NALP12-3AB	180.00		68	B41627
14	100	NALP14-3AB	191.00	30″	69	B41630
16	100	NALP16-3AB	202.00		70	B41630
18	100	NALP18-3AB	213.00		70	B41630
20	100	NALP20-3AB	224.00		71	B41630
22	225	NALP22-3AB	391.00	45″	103	B61645
24	225	NALP24-3AB	402.00		104	B61645
26	225	NALP26-3AB	413.00		104	B61645
28	225	NALP28-3AB	424.00		105	B61645
30	225	NALP30-3AB	435.00		106	B61645
32	225	NALP32-3AB	446.00		116	B61645
34	225	NALP34-3AB	457.00	51″	117	B61651
36	225	NALP36-3AB	468.00		117	B61651
38	225	NALP38-3AB	479.00		118	B61651
40	225	NALP40-3AB	490.00		118	B61651
42	225	NALP42-3AB	501.00		120	B61651

Common Trip Breakers Type NA
2 Pole (15-60A), add $0.70 to Two 1 Pole Breakers.
2 Pole (70A), add $6.80 to Two 1 Pole Breakers.
2 Pole (100A), add $5.20 to Four 1 Pole Breakers.
3 Pole (15-50A), add $12.70 to Three 1 Pole Breakers.
3 Pole (70A), add $18.70 to Three 1 Pole Breakers.
3 Pole (100A), add $13.40 to Six 1 Pole Breakers.

Mains: 3-Phase, 4-Wire, Lugs Only

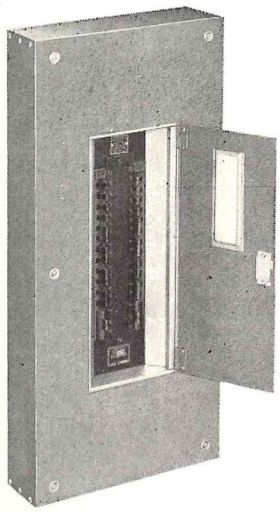
No. of Poles	Ampere Mains	Catalog Number	List Price	Box Height	Approx. Shipping Weight	Box Catalog Number
8	100	NALP08-4L	$115.00	24″	47	B41624
10	100	NALP10-4L	126.00		47	B41624
12	100	NALP12-4L	137.00		47	B41624
14	100	NALP14-4L	148.00	30″	54	B41630
16	100	NALP16-4L	159.00		55	B41630
18	100	NALP18-4L	170.00		55	B41630
20	100	NALP20-4L	181.00		72	B41630
22	100	NALP22-4L	192.00		72	B41630
24	100	NALP24-4L	203.00		73	B41630
26	100	NALP26-4L	214.00	33″	73	B41633
28	100	NALP28-4L	225.00		74	B41633
30	100	NALP30-4L	236.00		75	B41633
32	225	NALP32-4L	254.00	39″	89	B41639
34	225	NALP34-4L	265.00		90	B41639
36	225	NALP36-4L	276.00		90	B41639
38	225	NALP38-4L	287.00		91	B41639
40	225	NALP40-4L	298.00		91	B41639
42	225	NALP42-4L	309.00		92	B41639

Mains: 3-Phase, 4-Wire, 3-Pole Circuit Breaker •

No. of Poles	Ampere Mains	Catalog Number	List Price	Box Height	Approx. Shipping Weight	Box Catalog Number
8	50	NALP08-4AB	$163.00	27″	54	B41627
10	50	NALP10-4AB	174.00		54	B41627
12	50	NALP12-4AB	185.00		54	B41627
14	100	NALP14-4AB	196.00	30″	70	B41630
16	100	NALP16-4AB	228.00		71	B41630
18	100	NALP18-4AB	239.00		71	B41630
20	100	NALP20-4AB	250.00	39″	87	B41639
22	100	NALP22-4AB	261.00		87	B41639
24	100	NALP24-4AB	272.00		88	B41639
26	100	NALP26-4AB	283.00		88	B41639
28	100	NALP28-4AB	294.00		89	B41639
30	100	NALP30-4AB	305.00		90	B41639
32	225	NALP32-4AB	506.00	51″	125	B61651
34	225	NALP34-4AB	517.00		126	B61651
36	225	NALP36-4AB	528.00		126	B61651
38	225	NALP38-4AB	539.00		127	B61651
40	225	NALP40-4AB	550.00		127	B61651
42	225	NALP42-4AB	561.00		128	B61651

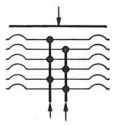
Space Only: Deduct $3.10 for each pole omitted.
Omit Solid Neutral: Deduct $11.00.
Special Features priced from pages 68 and 69.
Over Size Box: 20″ wide x 5¾″ deep with 6″ side gutters is available at no extra charge in assembled panel only. Specify special width on order.
• Breaker Frame listed in Table 2, Page 67.

WITH TYPE NB, BOLT-IN THERMAL-MAGNETIC BRANCH BREAKERS

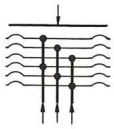


Type NBLP

—1⌀ 3W. S/N, 120/240 volts, A.C.
—3⌀ 4W. S/N, 120/208 volts, A.C.
—3⌀ 3 W. 240 volts, A.C.



1 Phase 3 Wire



3 Phase 4 Wire

BRANCHES: 15 amp, 120 volt, single pole, type NB circuit breakers. 20, 30, 40, and 50 ampere breakers available at no extra cost.* See footnotes for 2 and 3 pole, common trip circuit breakers.

BOXES: Code gauge galvanized steel, 16″ wide by 4¾″ deep except 200 ampere main breaker panels which are 6″ deep.

GUTTERS: Minimum 4″ side and 5″ end.

TRIMS: Code gauge steel, phosphatized and finished in gray enamel. Flush or surface mounting trims are available. **Flush fronts will be furnished unless otherwise specified.**

FEDERAL GOVERNMENT SPECIFICATIONS: These panelboards meet the requirements of WP-131A, Amendment No. 2, Class A.

* Increase of bus bar ratings should be considered when branch circuit breaker ratings exceed 15 amps. Bus rating limited to 225 amps maximum.

Mains: 1 Phase 3 Wire Lugs Only

No. of Poles	Amp Mains	Catalog Number	List Price	Box Height	Approx. Shipping Weight	Box Catalog No.
8	100	NBLP08-3L	**$105.00**	24″	45	B41624
10	100	NBLP10-3L	**116.00**		45	B41624
12	100	NBLP12-3L	**127.00**		53	B41624
14	100	NBLP14-3L	**138.00**	30″	54	B41630
16	100	NBLP16-3L	**149.00**		55	B41630
18	100	NBLP18-3L	**160.00**		55	B41630
20	100	NBLP20-3L	**171.00**		56	B41630
22	225	NBLP22-3L	**186.00**		72	B41630
24	225	NBLP24-3L	**197.00**		73	B41630
26	225	NBLP26-3L	**208.00**	33″	73	B41633
28	225	NBLP28-3L	**219.00**		73	B41633
30	225	NBLP30-3L	**230.00**		74	B41633
32	225	NBLP32-3L	**241.00**		75	B41633
34	225	NBLP34-3L	**252.00**	39″	85	B41639
36	225	NBLP36-3L	**263.00**		86	B41639
38	225	NBLP38-3L	**274.00**		86	B41639
40	225	NBLP40-3L	**285.00**		87	B41639
42	225	NBLP42-3L	**296.00**		89	B41639

Mains: 1 Phase 3 Wire 2 Pole Circuit Breaker •

8	70	NBLP08-3AB	**$138.00**	27″	53	B41627
10	70	NBLP10-3AB	**149.00**		53	B41627
12	70	NBLP12-3AB	**180.00**		68	B41627
14	100	NBLP14-3AB	**191.00**	30″	69	B41630
16	100	NBLP16-3AB	**202.00**		70	B41630
18	100	NBLP18-3AB	**213.00**		70	B41630
20	100	NBLP20-3AB	**224.00**		71	B41630
22	225	NBLP22-3AB	**391.00**	45″	103	B61645
24	225	NBLP24-3AB	**402.00**		104	B61645
26	225	NBLP26-3AB	**413.00**		104	B61645
28	225	NBLP28-3AB	**424.00**		105	B61645
30	225	NBLP30-3AB	**435.00**		106	B61645
32	225	NBLP32-3AB	**446.00**		116	B61645
34	225	NBLP34-3AB	**457.00**	51″	117	B61651
36	225	NBLP36-3AB	**468.00**		117	B61651
38	225	NBLP38-3AB	**479.00**		118	B61651
40	225	NBLP40-3AB	**490.00**		118	B61651
42	225	NBLP42-3AB	**501.00**		120	B61651

Common Trip Breakers Type NB
2 Pole 15-50A), add $0.70 to Two 1 Pole Breakers.
2 Pole (70A), add $6.80 to Two 1 Pole Breakers.
3 Pole (15-50A), add $12.70 to Three 1 Pole Breakers.
3 Pole (70A), add $18.70 to Three 1 Pole Breakers.
3 Pole (100A), add $13.40 to Six 1 Pole Breakers.

Mains: 3 Phase 4 Wire Lugs Only

No. of Poles	Amp Mains	Catalog Number	List Price	Box Height	Approx. Shipping Weight	Box Catalog No.
8	100	NBLP08-4L	**$115.00**	24″	47	B41624
10	100	NBLP10-4L	**126.00**		47	B41624
12	100	NBLP12-4L	**137.00**		47	B41624
14	100	NBLP14-4L	**148.00**	30″	54	B41630
16	100	NBLP16-4L	**159.00**		55	B41630
18	100	NBLP18-4L	**170.00**		55	B41630
20	100	NBLP20-4L	**181.00**		72	B41630
22	100	NBLP22-4L	**192.00**		72	B41630
24	100	NBLP24-4L	**203.00**		73	B41630
26	100	NBLP26-4L	**214.00**	33″	73	B41633
28	100	NBLP28-4L	**225.00**		74	B41633
30	100	NBLP30-4L	**236.00**		75	B41633
32	225	NBLP32-4L	**254.00**	39″	89	B41639
34	225	NBLP34-4L	**265.00**		90	B41639
36	225	NBLP36-4L	**276.00**		90	B41639
38	225	NBLP38-4L	**287.00**		91	B41639
40	225	NBLP40-4L	**298.00**		91	B41639
42	225	NBLP42-4L	**309.00**		92	B41639

Mains: 3 Phase 4 Wire 3 Pole Circuit Breaker •

8	50	NBLP08-4AB	**$163.00**	27″	54	B41627
10	50	NBLP10-4AB	**174.00**		54	B41627
12	50	NBLP12-4AB	**185.00**		54	B41627
14	100	NBLP14-4AB	**196.00**	30″	70	B41630
16	100	NBLP16-4AB	**228.00**		71	B41630
18	100	NBLP18-4AB	**239.00**		71	B41630
20	100	NBLP20-4AB	**250.00**	39″	87	B41639
22	100	NBLP22-4AB	**261.00**		87	B41639
24	100	NBLP24-4AB	**272.00**		88	B41639
26	100	NBLP26-4AB	**283.00**		88	B41639
28	100	NBLP28-4AB	**294.00**		89	B41639
30	100	NBLP30-4AB	**305.00**		90	B41639
32	225	NBLP32-4AB	**506.00**	51″	125	B61651
34	225	NBLP34-4AB	**517.00**		126	B61651
36	225	NBLP36-4AB	**528.00**		126	B61651
38	225	NBLP38-4AB	**539.00**		127	B61651
40	225	NBLP40-4AB	**550.00**		127	B61651
42	225	NBLP42-4AB	**561.00**		128	B61651

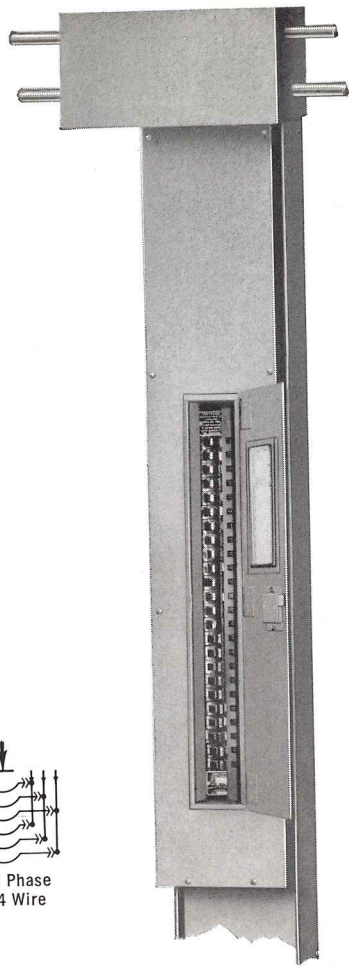
SPACE ONLY: Deduct $3.10 for each pole omitted.
OMIT SOLID NEUTRAL: Deduct $11.00.
SPECIAL FEATURES priced from pages 68 and 69.
OVER-SIZE BOX: 20″ wide x 5¾″ deep with 6″ side gutters is available at no extra charge. Specify special width on order.
• Breaker Frame Type listed in Table 2, Page 67.

CLASS

1600 Column Type Lighting Panelboards factory assembled

FPE

WITH TYPE NA, NB THERMAL-MAGNETIC BRANCH BREAKERS



BRANCHES:
15* amp, 120 volt, single-pole type NA or NB circuit breakers. 20, 30, 40, or 50 ampere breakers available at no extra cost. See footnotes for two and three pole common trip breakers available.

FRONTS:
Code gauge steel, phosphatized and finished in gray lacquer.

BOXES—Code Gauge Galvanized Steel

Panel	Type	Width	Side Gutter	Depth	Top Gutter	Bottom Gutter
NALP or NBLP	LX	8⅝″	2⅛″	4½″	4½″	4½″
	LXX	7¼″	1″	4½″	4½″	4½″

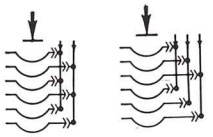
* Increase of bus bar rating should be considered when branch circuit breaker ratings exceed 15 amps. Bus rating limited to 200 amps maximum.

FEDERAL GOVERNMENT SPECIFICATIONS:
NALP and NBLP panelboards meet requirements of WP-131A, Amendment No. 2, Class A.

HOW TO ORDER

1. Give catalog number of panelboard.
2. State whether pull box is wanted and give knockout information.
3. Give length of wire duct extension. Measure from panelboard top to pull box top or ceiling.

NOTE: When applying column type panelboards, reference should be made to Section 362-5 of NEC covering wireways and wireway fill. See Panelboard Data page 67.



1 Phase 3 Wire — 3 Phase 4 Wire

USING TYPE NA CIRCUIT BREAKERS

Type NALP-LX(X) —1ø 3W. S/N, 120/240 volts, A.C.
—3ø 4W. S/N, 120/208 volts, A.C.
—3ø 3W. 240 volts, A.C.

Mains: 1 Phase 3 Wire Lugs Only

No. of Poles	Number of Single Pole Spaces	Ampere Mains	Catalog Number	List Price	Box Height	Approx. Shipping Weight
6	6	100	NALP06-3LX	$ 94.00	39″	29
8	4	100	NALP08-3LX	105.00		30
10	2	100	NALP10-3LX	116.00		30
12	0	100	NALP12-3LX	127.00		35
14	4	100	NALP14-3LX	138.00	39″	36
16	2	100	NALP16-3LX	149.00		40
18	0	100	NALP18-3LX	160.00		41
20	4	100	NALP20-3LX	171.00	39″	42
22	2	200	NALP22-3LX	186.00		52
24	0	200	NALP24-3LX	197.00		53
26	4	200	NALP26-3LX	208.00	57″	60
28	2	200	NALP28-3LX	219.00		61
30*	0	200	NALP30-3LX	230.00		62
32*	4	200	NALP32-3LX	241.00	57″	69
34*	2	200	NALP34-3LX	252.00		70
36*	0	200	NALP36-3LX	263.00		75
38*	2	200	NALP38-3LX	274.00	57″	76
40*	0	200	NALP40-3LX	285.00		77

COMMON TRIP BRANCH BREAKERS—TYPE NA
2 pole (15-50) amp, add $.70 to two 1 pole breakers.
3 pole (15-50) amp, add $12.70 to three 1 pole breakers.

SPACE ONLY—Deduct $3.10 for each pole omitted.

Mains: 3 Phase 4 Wire Lugs Only

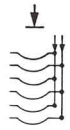
No. of Poles	Number of Single Pole Spaces	Ampere Mains	Catalog Number	List Price	Box Height	Approx. Shipping Weight
8	4	100	NALP08-4LX	$115.00	39″	32
10	2	100	NALP10-4LX	126.00		33
12	0	100	NALP12-4LX	137.00		39
14	4	100	NALP14-4LX	148.00	39″	40
16	2	100	NALP16-4LX	159.00		41
18	0	100	NALP18-4LX	170.00		49
20	4	100	NALP20-4LX	181.00	39″	50
22	2	100	NALP22-4LX	192.00		51
24	0	100	NALP24-4LX	203.00		60
26	4	100	NALP26-4LX	214.00	57″	61
28*	2	100	NALP28-4LX	225.00		62
30*	0	100	NALP30-4LX	236.00		68
32*	4	200	NALP32-4LX	254.00	57″	69
34*	2	200	NALP34-4LX	265.00		70
36*	0	200	NALP36-4LX	276.00		76
38*	4	200	NALP38-4LX	287.00	57″	77
40*	2	200	NALP40-4LX	298.00		78
42*	0	200	NALP42-4LX	309.00		79

MAIN BREAKERS
50 amp 2 pole type NA, add $.70 to two 1 pole breakers.
50 amp 3 pole type NA, add $12.70 to three 1 pole breakers.
100 amp 2 pole type NA, add $11.40 to two 1 pole breakers.
100 amp 3 pole type NA, add $22.70 to three 1 pole breakers.

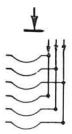
*** No U.L. Label furnished when these panels are combined with wire trough and pull box from next page.** **See Panelboard Data page 67.**

USING TYPE NB CIRCUIT BREAKERS

Type NBLP-LX(X) —1⌀ 3W. S/N, 120/240 volts, A.C.
—3⌀ 4W. S/N, 120/208 volts, A.C.



1 Phase 3 Wire



3 Phase 4 Wire

Mains: 1 Phase 3 Wire Lugs Only

No. of Poles	Ampere Mains	Catalog Number	List Price	Box Height	Approx. Shipping Weight
6	100	NBLP06-3LX	**$ 94.00**	39″	24
8	100	NBLP08-3LX	**105.00**		25
10	100	NBLP10-3LX	**116.00**		30
12	100	NBLP12-3LX	**127.00**		31
14	100	NBLP14-3LX	**138.00**	39″	39
16	100	NBLP16-3LX	**149.00**		40
18	100	NBLP18-3LX	**160.00**		41
20	100	NBLP20-3LX	**171.00**	39″	42
22	200	NBLP22-3LX	**186.00**		45
24	200	NBLP24-3LX	**197.00**		46
26	200	NBLP26-3LX	**208.00**	57″	60
28	200	NBLP28-3LX	**219.00**		61
30*	200	NBLP30-3LX	**230.00**		62
32*	200	NBLP32-3LX	**241.00**	57″	63
34*	200	NBLP34-3LX	**252.00**		74
36*	200	NBLP36-3LX	**263.00**		75
38*	200	NBLP38-3LX	**274.00**	57″	76
40*	200	NBLP40-3LX	**285.00**		77

COMMON TRIP BRANCH BREAKERS—TYPE NB
2 Pole (15-50A.), add $ 0.70 to Two 1 Pole Breakers.
2 Pole (70A.), add $ 6.80 to Two 1 Pole Breakers.
3 Pole (15-50A.), add $12.70 to Three 1 Pole Breakers.
3 Pole (70A.), add $18.70 to Three 1 Pole Breakers.
SPACE ONLY—Deduct $3.10 for each pole omitted.

Mains: 3 Phase 4 Wire Lugs Only

No. of Poles	Ampere Mains	Catalog Number	List Price	Box Height	Approx. Shipping Weight
8	100	NBLP08-4LX	**$115.00**	39″	25
10	100	NBLP10-4LX	**126.00**		30
12	100	NBLP12-4LX	**137.00**		31
14	100	NBLP14-4LX	**148.00**	39″	39
16	100	NBLP16-4LX	**159.00**		40
18	100	NBLP18-4LX	**170.00**		41
20	100	NBLP20-4LX	**181.00**	39″	42
22	100	NBLP22-4LX	**192.00**		45
24	100	NBLP24-4LX	**203.00**		46
26	100	NBLP26-4LX	**214.00**	57″	60
28*	100	NBLP28-4LX	**225.00**		61
30*	100	NBLP30-4LX	**236.00**		62
32*	200	NBLP32-4LX	**254.00**	57″	63
34*	200	NBLP34-4LX	**265.00**		74
36*	200	NBLP36-4LX	**276.00**		75
38*	200	NBLP38-4LX	**287.00**	57″	76
40*	200	NBLP40-4LX	**298.00**		77
42*	200	NBLP42-4LX	**309.00**		78

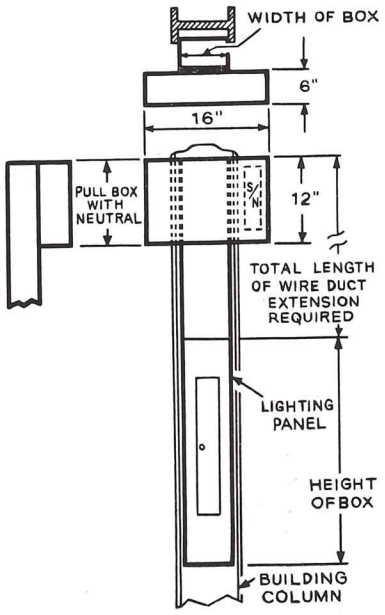
MAIN BREAKERS
50 amp 2 Pole type NB, add $0.70 to Two 1 Pole Breakers.
50 amp 3 Pole type NB, add $12.70 to Three 1 Pole Breakers.
100 amp 2 Pole type NB, add $5.20 to Four 1 Pole Breakers.
100 amp 3 Pole type NB, add $13.40 to Six 1 Pole Breakers.

*** No U.L. Label furnished when these panels are combined with wire duct extension and pullbox from this page.** **See Panelboard Data, page 67.**

Pull Box and Wire Duct

Pull Box	DIMENSIONS			List Price
	Width	Depth*	Height	
	16″	6″	12″	**$28.00**
Standard Wire Duct Extensions	Same as Panelboard	Same as Panelboard	36″	**$33.00**
			46″	**37.00**
			56″	**38.00**
			66″	**42.00**
			76″	**44.00**
			86″	**48.00**
			96″	**52.00**
			106″	**56.00**
			116″	**60.00**
			126″	**68.00**

* If 6″ depth required add 5% to the list price of panelboard & trough.



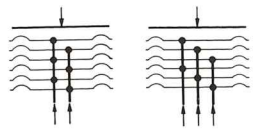
CLASS

1800 Circuit Breaker Lighting Panelboards factory assembled

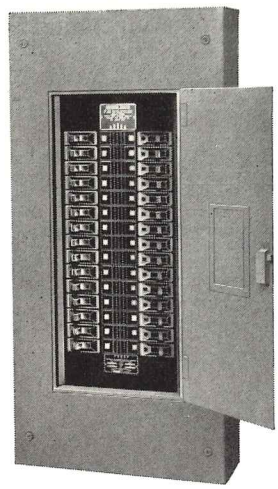
FPE

WITH TYPE NE AND NEF THERMAL-MAGNETIC BRANCH BREAKERS

Type NA1B—1ø 3W. S/N, 120/240 volts, A.C. or D.C.
—3ø 4W. S/N, 120/208 volts, A.C.



1 Phase 3 Wire | 3 Phase 4 Wire



BRANCHES: 15 amp, single-pole type NE circuit breakers. 20, 30, 40 and 50 amp branches available at no extra cost.* See footnote for available 2 and 3 pole NEF branches.

BOXES: Code gauge galvanized steel, 20″ wide by 5¾″ deep except main breaker panels which are 6¾″ deep.

GUTTERS: Minimum 4″ side and 6″ end.

TRIMS: Code gauge steel, phosphatized and finished in gray enamel. Flush and surface trims available. **Flush type will be furnished unless otherwise specified.**

FEDERAL GOVERNMENT SPECIFICATIONS: These panelboards meet the requirements of WP-131A, Amendment No. 2, Class C and D1.

* Increase of bus bar rating should be considered when branch circuit breaker ratings exceeds 15 amps. Bus rating limited to 225 amps maximum.

Mains: 1 Phase 3 Wire Lugs Only

No. of Poles	Amp Mains	Catalog Number	List Price	Box Height	Approx. Shipping Weight	Box Catalog Number
8	50	NA1B08-3L	**$171.00**	30⅛″	55	B52030
10	50	NA1B10-3L	**198.00**		61	B52030
12	100	NA1B12-3L	**225.00**		66	B52030
14	100	NA1B14-3L	**252.00**	34¼″	72	B52034
16	100	NA1B16-3L	**279.00**		78	B52034
18	100	NA1B18-3L	**306.00**		80	B52034
20	100	NA1B20-3L	**333.00**	38⅜″	86	B52038
22	225	NA1B22-3L	**364.00**		93	B52038
24	225	NA1B24-3L	**391.00**		99	B52038
26	225	NA1B26-3L	**418.00**	42½″	105	B52042
28	225	NA1B28-3L	**445.00**		107	B52042
30	225	NA1B30-3L	**472.00**		113	B52042
32	225	NA1B32-3L	**499.00**	46⅝″	115	B52046
34	225	NA1B34-3L	**526.00**		121	B52046
36	225	NA1B36-3L	**553.00**		123	B52046
38	225	NA1B38-3L	**580.00**	50¾″	129	B52050
40	225	NA1B40-3L	**607.00**		131	B52050
42	225	NA1B42-3L	**634.00**		137	B52050

Mains: 1 Phase 3 Wire 2-Pole Circuit Breaker •

8	50	NA1B08-3AB	**$204.00**	30⅛″	58	B52030
10	50	NA1B10-3AB	**231.00**	34¼″	64	B52034
12	100	NA1B12-3AB	**278.00**		89	B52034
14	100	NA1B14-3AB	**305.00**		91	B52034
16	100	NA1B16-3AB	**332.00**	38⅜″	97	B52038
18	100	NA1B18-3AB	**359.00**		99	B52038
20	100	NA1B20-3AB	**386.00**		105	B52038
22	225	NA1B22-3AB	**569.00**	50¾″	130	B52050
24	225	NA1B24-3AB	**596.00**		132	B52050
26	225	NA1B26-3AB	**623.00**	54⅞″	144	B52054
28	225	NA1B28-3AB	**650.00**		150	B52054
30	225	NA1B30-3AB	**677.00**		152	B52054
32	225	NA1B32-3AB	**704.00**	59″	159	B52059
34	225	NA1B34-3AB	**731.00**		160	B52059
36	225	NA1B36-3AB	**758.00**		166	B52059
38	225	NA1B38-3AB	**785.00**	63⅛″	168	B52063
40	225	NA1B40-3AB	**812.00**		174	B52063
42	225	NA1B42-3AB	**839.00**		176	B52063

COMMON TRIP BREAKERS—TYPE NEF
2 Pole (15-50 amp), add $5.50 to Two Single Pole Branches
3 Pole (15-50 amp), add $7.00 to Three Single Pole Branches
2 Pole (70-100 amp), add $52.50 to Panel Price (Max 2)
3 Pole (70-100 amp), add $69.00 to Panel Price (Max 2)

Mains: 3 Phase 4 Wire Lugs Only

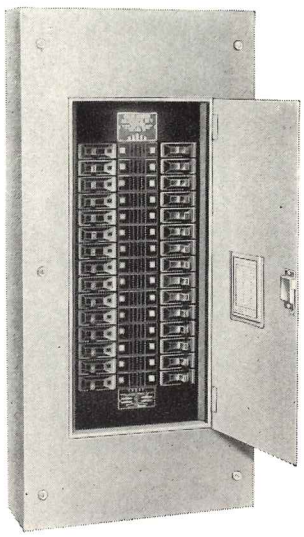
No. of Poles	Amp Mains	Catalog Number	List Price	Box Height	Approx. Shipping Weight	Box Catalog Number
8	100	NA1B08-4L	**$182.00**	30⅛″	60	B52030
10	100	NA1B10-4L	**209.00**		66	B52030
12	100	NA1B12-4L	**236.00**		68	B52030
14	100	NA1B14-4L	**263.00**	34¼″	70	B52034
16	100	NA1B16-4L	**290.00**		80	B52034
18	100	NA1B18-4L	**317.00**		82	B52034
20	100	NA1B20-4L	**344.00**	38⅜″	88	B52038
22	100	NA1B22-4L	**371.00**		90	B52038
24	100	NA1B24-4L	**398.00**		96	B52038
26	100	NA1B26-4L	**425.00**	42½″	102	B52042
28	100	NA1B28-4L	**452.00**		104	B52042
30	100	NA1B30-4L	**479.00**		110	B52042
32	225	NA1B32-4L	**512.00**	46⅝″	118	B52046
34	225	NA1B34-4L	**539.00**		124	B52046
36	225	NA1B36-4L	**566.00**		126	B52046
38	225	NA1B38-4L	**593.00**	50¾″	132	B52050
40	225	NA1B40-4L	**620.00**		134	B52050
42	225	NA1B42-4L	**647.00**		140	B52050

Mains: 3 Phase 4 Wire 3-Pole Circuit Breaker •

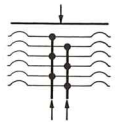
8	50	NA1B08-4AB	**$230.00**	34¼″	64	B52034
10	50	NA1B10-4AB	**257.00**		66	B52034
12	50	NA1B12-4AB	**284.00**		72	B52034
14	50	NA1B14-4AB	**311.00**	38⅜″	74	B52038
16	100	NA1B16-4AB	**359.00**		102	B52038
18	100	NA1B18-4AB	**386.00**		104	B52038
20	100	NA1B20-4AB	**413.00**	42½″	110	B52042
22	100	NA1B22-4AB	**440.00**		112	B52042
24	100	NA1B24-4AB	**467.00**		118	B52042
26	100	NA1B26-4AB	**494.00**	46⅝″	130	B52046
28	100	NA1B28-4AB	**529.00**		132	B52046
30	100	NA1B30-4AB	**548.00**		138	B52046
32	225	NA1B32-4AB	**764.00**	59″	170	B52059
34	225	NA1B34-4AB	**791.00**		172	B52059
36	225	NA1B36-4AB	**818.00**		178	B52059
38	225	NA1B38-4AB	**845.00**	63⅛″	180	B52063
40	225	NA1B40-4AB	**872.00**		186	B52063
42	225	NA1B42-4AB	**899.00**		188	B52063

SPACE ONLY—Deduct $9.70 for Each Pole Omitted.
OMIT NEUTRAL—Deduct $11.00.
PANELS with mains in excess of 225 amp are priced as NHDP, Page 58.
SPECIAL FEATURES priced from pages 68 and 69.
• Breaker Frame type listed in table 2, Page 67.

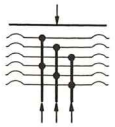
WITH TYPE NEF THERMAL-MAGNETIC BRANCH BREAKERS



Type NH1B—1⌀ 3W. S/N, 120/240 volts, A.C. or D.C.
—3⌀ 4W. S/N, 277/480 volts, A.C.
—3⌀ 3W. 480 volts, A.C.



1 Phase 3 Wire



3 Phase 4 Wire

BRANCHES: 15 amp, single-pole type NEF circuit breakers. 20 amp branches available at no extra cost. *See footnote for available 2 and 3 pole NEF branches.

BOXES: Code gauge galvanized steel, 20″ wide by 5¾″ deep except main breaker panels which are 6¾″ deep.

GUTTERS: Minimum 4″ side and 6″ end.

TRIMS: Code gauge steel, phosphatized and finished in gray enamel. Flush and surface trims available. **Flush type will be furnished unless otherwise specified.**

FEDERAL GOVERNMENT SPECIFICATIONS: These panelboards meet the requirements of WP-131A, Amendment No. 2, Class C and D1.

* Increase of bus bar rating should be considered when branch circuit breaker ratings exceeds 15 amps. Bus rating limited to 225 amps maximum.

Mains: 1 Phase 3 Wire Lugs Only

No. of Poles	Amp Mains	Catalog Number	List Price	Box Height	Approx. Shipping Weight	Box Catalog Number
8	50	NH1B08-3L	**$199.00**	30⅛″	55	B52030
10	50	NH1B10-3L	**233.00**		61	B52030
12	100	NH1B12-3L	**267.00**		66	B52030
14	100	NH1B14-3L	**301.00**	34¼″	72	B52034
16	100	NH1B16-3L	**335.00**		78	B52034
18	100	NH1B18-3L	**369.00**		80	B52034
20	100	NH1B20-3L	**403.00**	38⅜″	86	B52038
22	225	NH1B22-3L	**441.00**		93	B52038
24	225	NH1B24-3L	**475.00**		99	B52038
26	225	NH1B26-3L	**509.00**	42½″	105	B52042
28	225	NH1B28-3L	**543.00**		107	B52042
30	225	NH1B30-3L	**577.00**		113	B52042
32	225	NH1B32-3L	**611.00**	46⅝″	115	B52046
34	225	NH1B34-3L	**645.00**		121	B52046
36	225	NH1B36-3L	**679.00**		123	B52046
38	225	NH1B38-3L	**713.00**	50¾″	129	B52050
40	225	NH1B40-3L	**747.00**		131	B52050
42	225	NH1B42-3L	**781.00**		137	B52050

Mains: 1 Phase 3 Wire 2-Pole Circuit Breaker •

8	50	NH1B08-3AB	**$255.00**	30⅛″	58	B52030
10	50	NH1B10-3AB	**289.00**	34¼″	64	B52034
12	100	NH1B12-3AB	**339.00**		89	B52034
14	100	NH1B14-3AB	**373.00**		91	B52034
16	100	NH1B16-3AB	**407.00**	38⅜″	97	B52038
18	100	NH1B18-3AB	**441.00**		99	B52038
20	100	NH1B20-3AB	**475.00**		105	B52038
22	225	NH1B22-3AB	**646.00**	50¾″	130	B52050
24	225	NH1B24-3AB	**680.00**		132	B52050
26	225	NH1B26-3AB	**714.00**	54⅞″	144	B52054
28	225	NH1B28-3AB	**748.00**		150	B52054
30	225	NH1B30-3AB	**782.00**		152	B52054
32	225	NH1B32-3AB	**816.00**	59″	159	B52059
34	225	NH1B34-3AB	**850.00**		160	B52059
36	225	NH1B36-3AB	**884.00**		166	B52059
38	225	NH1B38-3AB	**918.00**	63⅛″	168	B52063
40	225	NH1B40-3AB	**952.00**		174	B52063
42	225	NH1B42-3AB	**986.00**		176	B52063

COMMON TRIP BREAKERS—TYPE NEF
2 Pole (15-50 amp), add $25.50 to Two Single Pole Branches
3 Pole (15-50 amp), add $25.50 to Three Single Pole Branches
2 Pole (70-100 amp), add $73.50 to Panel Price (Max 2)
3 Pole (70-100 amp), add $90.00 to Panel Price (Max 2)

Mains: 3 Phase 4 Wire Lugs Only

No. of Poles	Amp Mains	Catalog Number	List Price	Box Height	Approx. Shipping Weight	Box Catalog Number
8	100	NH1B08-4L	**$ 210.00**	30⅛″	60	B52030
10	100	NH1B10-4L	**244.00**		66	B52030
12	100	NH1B12-4L	**278.00**		68	B52030
14	100	NH1B14-4L	**312.00**	34¼″	70	B52034
16	100	NH1B16-4L	**346.00**		80	B52034
18	100	NH1B18-4L	**380.00**		82	B52034
20	100	NH1B20-4L	**414.00**	38⅜″	88	B52038
22	100	NH1B22-4L	**448.00**		90	B52038
24	100	NH1B24-4L	**482.00**		96	B52038
26	100	NH1B26-4L	**516.00**	42½″	102	B52042
28	100	NH1B28-4L	**550.00**		104	B52042
30	100	NH1B30-4L	**584.00**		110	B52042
32	225	NH1B32-4L	**624.00**	46⅝″	118	B52046
34	225	NH1B34-4L	**658.00**		124	B52046
36	225	NH1B36-4L	**692.00**		126	B52046
38	225	NH1B38-4L	**726.00**	50¾″	132	B52050
40	225	NH1B40-4L	**760.00**		134	B52050
42	225	NH1B42-4L	**794.00**		140	B52050

Mains: 3 Phase 4 Wire 3-Pole Circuit Breaker •

8	50	NH1B08-4AB	**$ 281.00**	34¼″	64	B52034
10	50	NH1B10-4AB	**315.00**		66	B52034
12	50	NH1B12-4AB	**349.00**		72	B52034
14	50	NH1B14-4AB	**383.00**	38⅜″	74	B52038
16	100	NH1B16-4AB	**433.00**		102	B52038
18	100	NH1B18-4AB	**467.00**		104	B52038
20	100	NH1B20-4AB	**501.00**	42½″	110	B52042
22	100	NH1B22-4AB	**535.00**		112	B52042
24	100	NH1B24-4AB	**569.00**		118	B52042
26	100	NH1B26-4AB	**603.00**	46⅝″	130	B52046
28	100	NH1B28-4AB	**637.00**		132	B52046
30	100	NH1B30-4AB	**671.00**		138	B52046
32	225	NH1B32-4AB	**876.00**	59″	170	B52059
34	225	NH1B34-4AB	**910.00**		172	B52059
36	225	NH1B36-4AB	**944.00**		178	B52059
38	225	NH1B38-4AB	**978.00**	63⅛″	180	B52063
40	225	NH1B40-4AB	**1,012.00**		186	B52063
42	225	NH1B42-4AB	**1,046.00**		188	B52063

SPACE ONLY—Deduct $12.40 for Each Pole Omitted.
OMIT NEUTRAL—Deduct $11.00.
PANELS with mains in excess of 225 amp are priced as NHDP, Page 59.
SPECIAL FEATURES priced from pages 68 and 69.
• Breaker Frame type listed in table 2, Page 67.

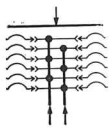
CLASS

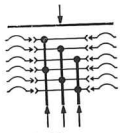
1800 Circuit Breaker Distribution Panelboards unassembled

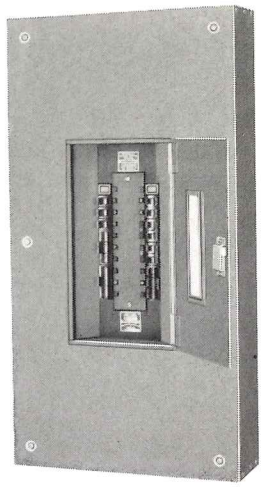
FPE

WITH TYPE NA PLUG-IN THERMAL-MAGNETIC BRANCH BREAKERS

Type NALP —1ø 3W S/N, 120/240 Volts, A.C.
—3ø 4W S/N, 120/208 Volts, A.C.
—3ø 3W, 240 Volts, A.C.


1 Phase
3 Wire


3 Phase
4 Wire



BRANCHES: Single pole, 120 volts, A.C. (See table for available 2 and 3 pole common trip circuit breakers).
BOXES: Galvanized Steel 20″ wide, 5¾″ deep except main breaker panels are 6¾″ deep.
GUTTERS: Side — 6″. End — 6″ up to 225 amp., 8″ 400 & 600 amp.
TRIM: Front and door with semi-flush lock. Finish, light gray enamel.

Mains: 1 Phase, 3 Wire, Lugs Only

Max. No. Poles	Main Amp Cap.	BASIC ENCL. & TRIM Catalog Number	List Price	Ship. Wt. Lbs.	Box Ht. Inches	TRIM ONLY Cat. No. Flush Prefix "TFDP" Surface Prefix "TSDP"	List Price	Ship. Wt. Lbs.
18	225	NALP182-3L-BE	$112.	73	34¼	2034	$37.	31
18	400	NALP184-3L-BE	141.	85	38⅜	2038	40.	34
18	600	NALP186-3L-BE	177.	91	38⅜	2038	42.	34
32	225	NALP322-3L-BE	133.	78	38⅜	2038	40.	34
32	400	NALP324-3L-BE	162.	89	42½	2042	42.	38
32	600	NALP326-3L-BE	198.	95	42½	2042	42.	38
42	225	NALP422-3L-BE	148.	88	46⅝	2046	45.	41
42	400	NALP424-3L-BE	177.	99	50¾	2050	48.	45
42	600	NALP426-3L-BE	213.	105	50¾	2050	48.	45
54	400	NALP544-3L-BE	195.	104	54⅞	2054	53.	49
54	600	NALP546-3L-BE	231.	109	54⅞	2054	53.	49

Mains: 1 Phase, 3 Wire, 2 Pole Circuit Breaker •

Max. No. Poles	Main Amp Cap.	BASIC ENCL. & TRIM Catalog Number	List Price	Ship. Wt. Lbs.	Box Ht. Inches	TRIM ONLY Cat. No. Flush Prefix "TFDP" Surface Prefix "TSDP"	List Price	Ship. Wt. Lbs.
18	225	NALP182-3AB-BE	$317.	106	46⅝	2046	$45.	41
18	400	NALP184-3AB-BE	475.	118	50¾	2050	48.	45
32	225	NALP322-3AB-BE	338.	111	50¾	2050	48.	45
32	400	NALP324-3AB-BE	496.	122	54⅞	2054	53.	49
42	225	NALP422-3AB-BE	353.	131	59	2059	57.	52
42	400	NALP424-3AB-BE	511.	142	63⅛	2063	62.	56
54	400	NALP544-3AB-BE	529.	152	67¼	2067	68.	60

Mains: 3 Phase, 4 Wire, Lugs Only

Max. No. Poles	Main Amp Cap.	BASIC ENCL. & TRIM Catalog Number	List Price	Ship. Wt. Lbs.	Box Ht. Inches	TRIM ONLY Cat. No. Flush Prefix "TFDP" Surface Prefix "TSDP"	List Price	Ship. Wt. Lbs.
18	225	NALP182-4L-BE	$125.	85	34¼	2034	$37.	31
18	400	NALP184-4L-BE	156.	92	38⅜	2038	40.	34
18	600	NALP186-4L-BE	192.	96	38⅜	2038	42.	34
30	225	NALP302-4L-BE	143.	88	38⅜	2038	40.	34
30	400	NALP304-4L-BE	174.	96	42½	2042	42.	38
30	600	NALP306-4L-BE	210.	99	42½	2042	42.	38
42	225	NALP422-4L-BE	161.	95	46⅝	2046	45.	41
42	400	NALP424-4L-BE	192.	103	50¾	2050	48.	45
42	600	NALP426-4L-BE	228.	107	50¾	2050	48.	45
54	225	NALP542-4L-BE	179.	99	50¾	2050	48.	45
54	400	NALP544-4L-BE	210.	107	54⅞	2054	53.	49
54	600	NALP546-4L-BE	246.	111	54⅞	2054	53.	49

Mains: 3 Phase, 4 Wire, 3 Pole Circuit Breaker •

Max. No. Poles	Main Amp Cap.	BASIC ENCL. & TRIM Catalog Number	List Price	Ship. Wt. Lbs.	Box Ht. Inches	TRIM ONLY Cat. No. Flush Prefix "TFDP" Surface Prefix "TSDP"	List Price	Ship. Wt. Lbs.
18	225	NALP182-4AB-BE	$377.	112	46⅝	2046	$45.	41
18	400	NALP184-4AB-BE	555.	125	50¾	2050	48.	45
30	225	NALP302-4AB-BE	395.	117	50¾	2050	48.	45
30	400	NALP304-4AB-BE	576.	129	54⅞	2054	53.	49
42	225	NALP422-4AB-BE	413.	137	59	2059	57.	52
42	400	NALP424-4AB-BE	591.	149	63⅛	2063	62.	56
54	225	NALP542-4AB-BE	431.	147	63⅛	2063	62.	56
54	400	NALP544-4AB-BE	609.	159	67¼	2067	68.	60

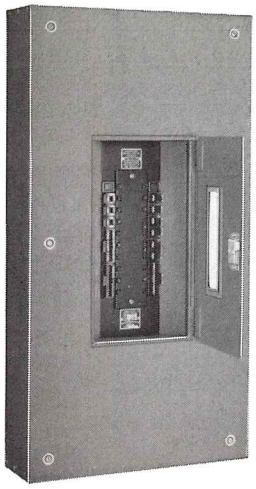
Type NA Circuit Breakers

Amps	SINGLE POLE Cat. No.	SINGLE POLE List Price	DOUBLE POLE Cat. No.	DOUBLE POLE List Price	THREE POLE Cat. No.	THREE POLE List Price
15	15	$3.10	215	$ 6.90	3P15	$22.00
20	20	3.10	220	6.90	3P20	22.00
30	30	3.10	230	6.90	3P30	22.00
40	40	3.10	240	6.90	3P40	22.00
50	50	3.10	250	6.90	3P50	22.00
60			2P60	6.90	—	
70			2P70	13.00	3P70	28.00
100			2P100	17.60	3P100	32.00

Accessories

Description	Catalog Number	List Price
Filler Plate	E51478-3	$ .30
Handle Tie	HTNA	.10
1 Pole Lockoff—Non-Padlocking	1 LOK	.20
2 Pole Lockoff—Padlocking	2 LOK	.70
3 Pole Lockoff—Padlocking	3 LOK	.70
Subfeed Lug Kit (100A)	SFL 100	20.00
Subfeed Lug Kit (225A)	SFL 200	24.00

• Breaker Frame Type listed in Table 2, Page 67.



Type NALP

SERVICE VOLTAGE: 240 volts, A.C.

MAIN LUGS: 600 amp. max.

MAIN BREAKER: 400 amp. max.

BRANCHES: 1 pole Type NA circuit breaker 15 through 50 amp.
2 and 3 pole Type NA circuit breakers, 15 through 100 amp.

BOX Code gauge galvanized steel, 20″ wide by 5¾″ deep except main breaker panels are 6¾″ deep.

TRIM: Code gauge steel phosphatized and finished in gray enamel.
Flush or surface mounting trim available.
Flush type will be furnished unless otherwise specified.

FEDERAL GOVERNMENT SPECIFICATIONS: These panelboards meet the requirements of WP-131A, Amendment No. 2, Class A1, A2, A4, A5.

Pricing Information

TO DETERMINE TOTAL LIST PRICE

1. Use correct Base Price.
2. Add price and "X units" for each Branch Circuit.
3. Add price and "X units" for each space required for future circuits.
4. Add price of Solid Neutral Bar, if required.
5. Add price of required Special Features from pages 68 and 69.
6. Total all prices. This is the list price of the panel.
7. Total "X Units" and select cabinet height corresponding to the proper main from Cabinet Dimension table:

Base List Price

Type of Main		225 Amp	400 Amp	600 Amp
Lugs Only	2-Pole	*	$ 82.00	$104.00
Lugs Only	3-Pole	*	97.00	119.00
Main Breaker •	2-Pole	*	416.00 (24X)	—
Main Breaker •	3-Pole	*	496.00 (24X)	—

• Breaker Frame Type listed in Table 2, Page 67.
* When 225 amp mains are required, price panelboard from page 48.

Branch Circuit List Price

Type of Branch	1 Pole	2 Pole	3 Pole
NA 15, 20, 30, 40, 50,	$5.50 (1X)	$12.00 (2X)	$30.00 (3X)
NA 70	—	18.00 (2X)	35.50 (3X)
NA 100	—	22.50 (2X)	40.00 (3X)
Space or Provision for Future Breakers	2.50 (1X)	5.00 (2X)	7.50 (3X)

Sub Feeds (Maximum of one per panel*) Consult Factory for Dimensions

Main Amps	LUGS		CIRCUIT BREAKERS	
	2 Hot Bus Bars	3 Hot Bus Bars	2 Pole	3 Pole
225	$11.00	$16.00	$193.00*	$242.00*
400	32.00	40.00	338.00*	417.00*
600	65.00	72.00	—	—

Split Bus or Meter Loop

Main Amps.	2 Hot Bus Bars	3 Hot Bus Bars
225	$26.00 (12X)	$37.00 (12X)
400	55.00 (18X)	65.00 (18X)
600	65.00 (18X)	72.00 (18X)

Estimating Example

120/208V 3ø 4W

Base 400A Main Breaker	$496.00	24X
2 — 20A 1P NA Breakers	11.00	2X
5 — 50A 2P NA Breakers	60.00	10X
3 — 70A 3P NA Breakers	106.50	9X
2 — 100A 3P NA Breakers	80.00	6X
1 — Solid Neutral Bar	32.00	—
Total List Price	$785.50	51X

Box Size 54⅞″ H x 20″ W x 6¾″ D

Solid Neutral Bar

Neutral Bar Amps	List Price
225 Amp.	$25.00
400 Amp.	32.00
600 Amp.	46.00

Gutter Sizes

Mains →	225 Amp	400 Amp	600 Amp
Top	6″	8″	8″
Bottom	6″	8″	8″
Sides	6″	6″	6″

Cabinet Dimension Table

Total "X Units"		CABINET HEIGHT	
1 Phase	3 Phase	225 Amp Panel	400 and 600 Amp Panels
Up to 18X	Up to 18X	34¼″	38⅜″
19X to 32X	19X to 30X	38⅜″	42½″
33X to 42X	31X to 42X	46⅝″	50¾″
43X to 54X	43X to 54X	50¾″	54⅞″
55X to 66X	55X to 66X	59″	63⅛″
67X to 78X	67X to 78X	63⅛″	67¼″

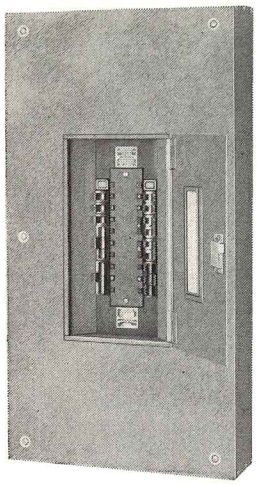
To find approximate panelboard weight, multiply total space units by 3 lbs.

CLASS
1800 Circuit Breaker Distribution Panelboards factory assembled

FPE

WITH TYPE NB BOLT-IN THERMAL-MAGNETIC BRANCH BREAKERS

Type NBLP



SERVICE VOLTAGE: 240 volts, A.C.

MAIN LUGS: 600 amp. max.

MAIN BREAKER: 400 amp. max.

BRANCHES: 1 pole Type NB circuit breaker 15 through 50 amp.
2 & 3 pole Type NB circuit breakers, 15 through 100 amp.

BOX: Code gauge galvanized steel, 20″ wide by 5¾″ deep except main breaker panels are 6¾″ deep.

TRIM: Code gauge steel phosphatized and finished in gray enamel.
Flush or surface mounting trim available.
Flush type will be furnished unless otherwise specified.

FEDERAL GOVERNMENT SPECIFICATIONS: These panelboards meet the requirements of WP-131A, Amendment No. 2, Class A1, A2, A4, A5.

Pricing Information
TO DETERMINE TOTAL LIST PRICE

1. Use correct Base Price
2. Add price and "X Units" for each Branch Circuit.
3. Add price and "X Units" for each space required for future circuits.
4. Add price of Solid Neutral Bar, if required.
5. Add price and "X Units" of required Special Features from pages 68 and 69.
6. Total all prices. This is the list price of the panel.
7. Total all "X Units" and select cabinet height corresponding to the proper mains from Cabinet Dimension table:

Base List Price

Type of Main		225 Amp	400 Amp	600 Amp
Lugs Only	2-Pole	*	$ 82.00	$104.00
Lugs Only	3-Pole	*	97.00	119.00
Main Breaker •	2-Pole	*	416.00 (24X)	—
Main Breaker •	3-Pole	*	496.00 (24X)	—

• Breaker Frame Type listed in Table 2, Page 67.
* When 225 amp mains are required price panelboard from page 49.

Branch Circuit List Price

Type of Branch	1 Pole	2 Pole	3 Pole
NB 15, 20, 30, 40, 50	$5.50 (1X)	$12.00 (2X)	$30.00 (3X)
NB 70	—	18.00 (2X)	35.50 (3X)
NB 100	—	22.50 (2X)	40.00 (3X)
Space or Provision for Future Breakers	2.50 (1X)	5.00 (2X)	7.50 (3X)

Solid Neutral Bar

Neutral Bar Amps	List Price
225 Amp.	$25.00
400 Amp.	32.00
600 Amp.	46.00

Sub Feeds (Maximum of one per panel*) Consult Factory for Dimensions

Main Amps	LUGS		CIRCUIT BREAKER	
	2 Hot Bus Bars	3 Hot Bus Bars	2 Pole	3 Pole
225	$11.00	$16.00	$193.00*	$242.00*
400	32.00	40.00	338.00*	417.00*
600	65.00	72.00	—	—

Estimating Example

120/208V 3φ 4W		
Base 400A Main Circuit Breaker	$496.00	24X
3 — 15A 1P NB Breakers	16.50	3X
2 — 15A 2P NB Breakers	24.00	4X
3 — 30A 2P NB Breakers	36.00	6X
1 — 400A Solid Neutral Bar	32.00	—
Total List Price	$604.50	37X
Box Size 50¾″ H x 20″ W x 6¾″ D		

Split Bus or Meter Loop

Main Amps.	2 Hot Bus Bars	3 Hot Bus Bars
225	$26.00 (12X)	$37.00 (12X)
400	55.00 (18X)	65.00 (18X)
600	65.00 (18X)	72.00 (18X)

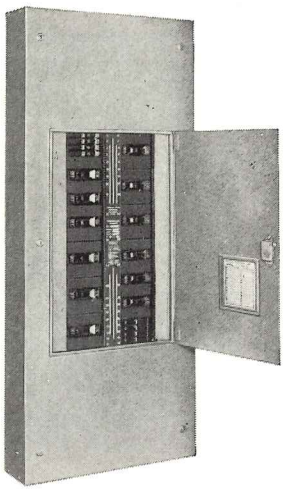
Gutter Sizes

MAINS →	225 Amp	400 Amp	600 Amp
Top	6″	8″	8″
Bottom	6″	8″	8″
Sides	6″	6″	6″

Cabinet Dimension Table

TOTAL "X UNITS"		CABINET HEIGHT	
1 Phase	3 Phase	225 Amp Panel	400 and 600 Amp Panels
Up to 18X	Up to 18X	34¼″	38⅜″
19X to 32X	19X to 30X	38⅜″	42½″
33X to 42X	31X to 42X	46⅝″	50¾″
43X to 54X	43X to 54X	50¾″	54⅞″
55X to 66X	55X to 66X	59″	63⅛″
67X to 78X	67X to 78X	63⅛″	67¼″

To find approximate panelboard weight, multiply total space units by 3 lbs.



UNASSEMBLED STABreaker® PANELBOARDS

SERVICE VOLTAGE: 600 v., A.C. Max.

MAIN LUGS: 225, 400, 600, amps.

MAIN BREAKER: 400 amp maximum.

BRANCHES: 1 Pole NC-S (15, 20 amp), 2 and 3 Pole NE-S and NF-S (15-100 amp), NJ-S (70-400 amp).

BOXES: Code gauge galvanized steel. Size is determined by voltage and frame size of circuit breakers.

TRIMS: Code gauge, phosphatized, finished baked gray enamel. Flush or surface available. **Surface type furnished unless otherwise specified.**

FEDERAL GOVERNMENT SPECIFICATIONS: These panelboards meet the requirements of WP-131A Amendment No. 2 classes A, C, D, E.

TO DETERMINE TOTAL LIST PRICE:

1. List each main or branch circuit breaker required including space for future circuits. Select correct price and "X units" for each circuit.
2. Determine total "X units" for all circuits including main breaker.
3. Select the proper STABreaker Panelboard based on total "X units" required, the size of the largest main or branch circuit breaker and the voltage.
4. Order plug-in STABreaker circuit breakers and panel assembly by catalog number.

STABreaker Panel Assemblies

Main Bus Amperes	Max. Breaker Size (Amp)	Max. Breaker Frame Size	Voltage	Total X Units	CATALOG NUMBER			DIMENSIONS IN INCHES			Weight
					Surface	Flush	List Price	Height	Width	Depth	
225	100	NE-S	250	36	225SE	225SE-F	**$ 92.00**	48	16	5¾	103
400	100	NE-S	250	72	*400DE	*400DE-F	**173.00**	53	22	5¾	161
400	400	NJ-S	600	48	400SJ-1	400SJ-1-F	**151.00**	60	24	8¾	210
600	225	NJ-S	600	72	*600DJ	*600DJ-F	**216.00**	60	28¾	8¾	305

* Not suitable for use as service equipment.

Plug-in Mounted—STABreaker

Amp Rating	ONE POLE			TWO POLE†			THREE POLE		
	X Units	Catalog Number	List Price	X Units	Catalog Number	List Price	X Units	Catalog Number	List Price
NC-S 1 Pole—120V A.C.				**NE-S 2 and 3 Pole**—240V A.C., 125/250V D.C.					
15	1X	21015NC	**$3.60**	4X	2215	**$ 28.00**	6X	2315	**$ 41.00**
20	1X	21020NC	**3.60**	4X	2220	**28.00**	6X	2320	**41.00**
30	—	—	—	4X	2230	**28.00**	6X	2330	**41.00**
40	—	—	—	4X	2240	**28.00**	6X	2340	**41.00**
50	—	—	—	4X	2250	**28.00**	6X	2350	**41.00**
70	—	—	—	4X	2270	**46.00**	6X	2370	**60.00**
100	—	—	—	4X	2200	**46.00**	6X	2300	**60.00**
Weight	.2 lbs.			3 lbs.			4 lbs.		
NF-S 2 and 3 Pole—600V A.C., 250V D.C.									
15	—	—	—	6X	4215	**60.00**	6X	4315	**77.00**
20	—	—	—	6X	4220	**60.00**	6X	4320	**77.00**
30	—	—	—	6X	4230	**60.00**	6X	4330	**77.00**
40	—	—	—	6X	4240	**60.00**	6X	4340	**77.00**
50	—	—	—	6X	4250	**60.00**	6X	4350	**77.00**
70	—	—	—	6X	4270	**76.00**	6X	4370	**93.00**
100	—	—	—	6X	4200	**76.00**	6X	4300	**93.00**
Weight				5 lbs.			7.5 lbs.		
NJ-S 2 and 3 Pole—600V A.C., 250V D.C.									
70	—	—	—	12X	6207	**190.00**	12X	6307	**234.00**
100	—	—	—	12X	6210	**190.00**	12X	6310	**234.00**
125	—	—	—	12X	6212	**190.00**	12X	6312	**234.00**
150	—	—	—	12X	6215	**190.00**	12X	6315	**234.00**
175	—	—	—	12X	6217	**190.00**	12X	6317	**234.00**
200	—	—	—	12X	6220	**190.00**	12X	6320	**234.00**
225	—	—	—	12X	6222	**190.00**	12X	6322	**234.00**
250	—	—	—	12X	6225	**300.00**	12X	6325	**364.00**
300	—	—	—	12X	6230	**300.00**	12X	6330	**364.00**
350	—	—	—	12X	6235	**300.00**	12X	6335	**364.00**
400	—	—	—	12X	6240	**300.00**	12X	6340	**364.00**
Weight				16 lbs.			19.5 lbs.		

† These breakers have "CA" bus stabs. "BA" and "CB" stabs available at same price.

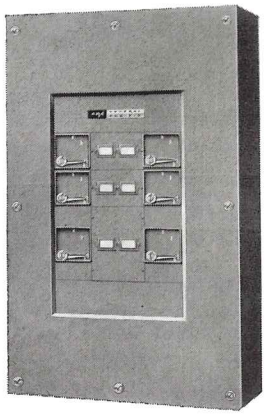
CLASS

1800 Circuit Breaker Distribution Panelboards factory assembled

FPE

WITH TYPES NEF-R AND NB THERMAL-MAGNETIC BRANCH BREAKERS

Type NHDP



SERVICE VOLTAGE: 240 volts, A.C. or 125/250 volts, D.C.

MAIN LUGS: 600 amp max.

MAIN BREAKER: 400 amp max.

BRANCHES: 1, 2, and 3 pole Type NEF-R circuit breakers, 15 through 100 amp.
1, 2 and 3 pole Type NB circuit breakers, 15 through 100 amp.

BOXES: Code gauge galvanized steel, 20″ wide by 6¾″ deep.

TRIM: Code gauge steel, phosphatized and finished in gray enamel.
Flush or surface mounting trim available.
Surface type will be furnished unless otherwise specified.

DOOR: Furnished as optional feature with rotary handle circuit breaker. Add $60.00 to Panel Price. Increase box depth to 8¾″.

FEDERAL GOVERNMENT SPECIFICATIONS: This panelboard meets the requirements of WP-131A, Amendment No. 2, Class D1, E1, E3 using NEF-R circuit breakers: Class A-1, A-2 using NB circuit breakers.

Pricing Information
TO DETERMINE TOTAL LIST PRICE

1. Use correct Base Price.
2. Add price and "X units" for each Branch Circuit.
3. Add price and "X units" for each space for future circuits.
4. Add price of Solid Neutral Bar, if required.
5. Add price and "X units" of required Special Features from pages 68 and 69.
6. Total all prices. This is the list price of the panel.
7. Total all "X units" and select cabinet height corresponding with proper main bus size from Cabinet Dimension table.

Base List Prices

Type of Main	50 Amp	100 Amp	225 Amp	400 Amp	600 Amp
Lugs Only 2-Pole	$ 56.00	$ 56.00	$ 60.00	$ 82.00	$104.00
Lugs Only 3-Pole	67.00	67.00	73.00	97.00	119.00
● Main Br. 2-Pole	89.00 (2X)	109.00 (2X)	265.00 (18X)	416.00 (18X)	—
● Main Br. 3-Pole	115.00 (3X)	136.00 (3X)	325.00 (18X)	496.00 (18X)	—

● Breaker Frame Type listed in Table 2, Page 67.

Branch Circuit List Prices

Type of Branch	1 Pole	2 Pole	3 Pole
NEF-R 15, 20, 30, 40, 50	$13.50 (1X)	$32.50 (2X)	$47.50 (3X)
NEF-R 70, 100	26.00 (1X)	52.50 (2X)	69.00 (3X)
NB 15-50 (6 Poles Minimum)	5.50*	12.00*	30.00*
NB 70	—	18.00*	36.00*
NB 100	—	22.50*	40.00*
Space or Provision for Future Breakers	2.50 (1X)	5.00 (2X)	7.50 (3X)

*** When NB Breakers are used the following "X" units are required:**

No. Poles	0 - 12	13 - 30	31 - 38
X Units	18	30	36

Solid Neutral Bar

Neutral Bar Amps	List Price
100 Amp or Less	$20.00
225 Amp	25.00
400 Amp	32.00
600 Amp	46.00

Sub Feeds (Maximum of one per panel*)

Amps	LUGS		CIRCUIT BREAKERS	
	2 Hot Bus Bars	3 Hot Bus Bars	2 Pole	3 Pole
50	$11.00	$16.00	$ 32.50 (4X)	$ 47.50 (6X)
100	11.00	16.00	52.50 (4X)	69.00 (6X)
225	11.00	16.00	193.00 (24X)	242.00 (24X)
400	32.00	40.00	338.00 (24X)	417.00 (24X)

List Prices Include Heaters: Units will be shipped with overload heaters. Order heaters from Redi-Reference page 100.

Consult your local FPE field office for prices and dimensions on additional PMS Starters available.

Estimating Example

120/208V 3φ 4W		
Base 225A 3P Main Circuit Breaker	$325.00	18X
8—15A 1P NB Breakers	44.00	18X
2—15A 3P NEF-R Breakers	95.00	6X
2—Size 1 3P Non Reversing Starters	250.00	13X
1—50A 3P NEF-R Breaker	47.50	3X
1—70A 3P NEF-R Breaker	69.00	3X
1—Solid Neutral Bar	25.00	—
Total List Price	$855.50	61X
Box Size 67¼″ H x 20″ W x 6¾″ D		

PMS Starter Only Price—3 Pole Non-Reversing Class 4204 Starter

Max. NEMA Size	STARTER HP		CIRCUIT BREAKER SIZE AMP.		LIST PRICE STARTER UNIT ONLY		X Units
	Left Unit	Right Unit	Left Unit	Right Unit	Wired	Space Only	
220 Volts							
0 - –	3	—	20	—	$145.00	$43.00	13X
0 - 0	3	3	20	20	224.00	43.00	13X
1 - –	7½	—	50	—	164.00	43.00	13X
1 - 0	7½	3	50	20	243.00	43.00	13X
1 - 1	7½	7½	50	50	250.00	43.00	13X

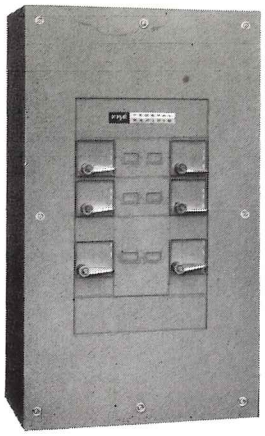
Accessories for PMS Motor Starters

Start-Stop Push button (Wired)	$11.00
Forward-Reverse-Stop Push button (Wired)	54.00
Selector Switch (Wired)	11.00
Pilot Light (includes Interlock when required)	36.00
Interlock (1-N.O.) (Unwired)	16.00

Cabinet Dimension Table

Total "X Units"	CABINET HEIGHT		Total "X Units"	CABINET HEIGHT	
	225 Amp Mains	400 & 600 Amp Mains		225 Amp Mains	400 & 600 Amp Mains
Up to 6X	—	30⅛″	37X to 42X	50¾″	54⅞″
7X to 12X	30⅛″	34¼″	43X to 48X	54⅞″	59″
13X to 18X	34¼″	38⅜″	49X to 54X	59″	63⅛″
19X to 24X	38⅜″	42½″	55X to 60X	63⅛″	67¼″
25X to 30X	42½″	46⅝″	61X to 66X	67¼″	71⅜″
31X to 36X	46⅝″	50¾″	67X to 72X	71⅜″	75½″

To find approximate Panelboard Weight multiply total "X Space" Units by 4.4 lbs.



Type NHDP

SERVICE VOLTAGE:	480 volts, A.C. or 125/250 volts, D.C.
MAIN LUGS:	600 amp max.
MAIN BREAKER:	400 amp max.
BRANCHES:	1, 2, and 3 pole Type NEF-R circuit breakers, 15 through 100 amp.
BOXES:	Code gauge galvanized steel, 20″ wide by 6¾″ deep.
TRIM:	Code gauge steel, phosphatized and finished in gray enamel. Flush or surface mounting trim available. **Surface type will be furnished unless otherwise specified.**
DOOR:	Furnished as optional feature with rotary handle circuit breaker. Add $60.00 to Panel Price. Increase box depth to 8¾″.
FEDERAL GOVERNMENT SPECIFICATIONS:	This panelboard meets the requirements of WP-131A, Amendment No. 2, Class D1, E1, E3 using NEF-R circuit breakers.

Pricing Information

TO DETERMINE TOTAL LIST PRICE

1. Use correct Base Price.
2. Add price and "X units" for each Branch Circuit.
3. Add price and "X units" for each space for future circuits.
4. Add price of Solid Neutral Bar, if required.
5. Add price and "X units" of required Special Features from pages 68 and 69.
6. Total all prices. This is the list price of the panel.
7. Total all "X units" and select cabinet height corresponding with proper main bus size from Cabinet Dimension table.

Base List Prices

Type of Main	50 Amp	100 Amp	225 Amp	400 Amp	600 Amp
Lugs Only 2-Pole	$ 56.00	$ 56.00	$ 60.00	$ 82.00	$104.00
Lugs Only 3-Pole	67.00	67.00	73.00	97.00	119.00
● Main Br. 2-Pole	116.00 (2X)	144.00 (2X)	265.00 (18X)	416.00 (18X)	—
● Main Br. 3-Pole	130.00 (3X)	158.00 (3X)	325.00 (18X)	496.00 (18X)	—

● Breaker Frame Type listed in Table 2, Page 67.

Branch Circuit List Prices

Type of Branch	1 Pole	2 Pole	3 Pole
NEF-R 15, 20, 30, 40, 50	$19.50 (1X)	$59.50 (2X)	$76.50 (3X)
NEF-R 70, 100	31.00 (1X)	73.50 (2X)	90.50 (3X)
Space or Provision for Future Breakers	2.50 (1X)	5.00 (2X)	7.50 (3X)

Solid Neutral Bar

Neutral Bar Amps	List Price
100 Amp or Less	$20.00
225 Amp	25.00
400 Amp	32.00
600 Amp	46.00

Sub Feeds (Maximum of one per panel*)

Amps	LUGS		CIRCUIT BREAKERS	
	2 Hot Bus Bars	3 Hot Bus Bars	2 Pole	3 Pole
50	$11.00	$16.00	$ 59.50 (4X)	$ 76.50 (6X)
100	11.00	16.00	73.50 (4X)	90.50 (6X)
225	11.00	16.00	193.00 (24X)	242.00 (24X)
400	32.00	40.00	338.00 (24X)	417.00 (24X)

Estimating Example

120/208V 3φ 4W		
Base 225A 3P Main Circuit Breaker	$325.00	18X
2—15A 3P NEF-R Breakers	153.00	6X
2—Size 1 3P Non Reversing Starters	250.00	13X
1—50A 3P NEF-R Breaker	76.50	3X
1—70A 3P NEF-R Breaker	90.50	3X
1—Solid Neutral Bar	25.00	—
Total List Price	$920.00	43X

Box Size 54⅞″ H x 20″ W x 6¾″ D

PMS Starter Only Price—3 Pole Non-Reversing Class 4204 Starter

Max. NEMA Size	STARTER HP		CIRCUIT BREAKER SIZE AMP.		LIST PRICE STARTER UNIT ONLY		X Units
	Left Unit	Right Unit	Left Unit	Right Unit	Wired	Space Only	
220 Volts							
0 - –	3	—	20	—	$145.00	$43.00	13X
0 - 0	3	3	20	20	224.00	43.00	13X
1 - –	7½	—	50	—	164.00	43.00	13X
1 - 0	7½	3	50	20	243.00	43.00	13X
1 - 1	7½	7½	50	50	250.00	43.00	13X
440 Volts							
0 - –	5	—	15	—	145.00	43.00	13X
0 - 0	5	5	15	15	224.00	43.00	13X
1 - –	10	—	30	—	164.00	43.00	13X
1 - 0	10	5	30	15	243.00	43.00	13X
1 - 1	10	10	30	30	250.00	43.00	13X

List Prices Include Heaters: Units will be shipped with overload heaters. Order heaters from Redi-Reference page 100.
Consult your local FPE field office for prices and dimensions on additional PMS Starters available.

Accessories for PMS Motor Starters

Start-Stop Push button (Wired)	$11.00
Forward-Reverse-Stop Push button (Wired)	54.00
Selector Switch (Wired)	11.00
Pilot Light (includes Interlock when required)	36.00
Interlock (1-N.O.) (Unwired)	16.00

Cabinet Dimension Table

Total "X Units"	CABINET HEIGHT		Total "X Units"	CABINET HEIGHT	
	225 Amp Mains	400 & 600 Amp Mains		225 Amp Mains	400 & 600 Amp Mains
UP to 6X	—	30⅛″	37X to 42X	50¾″	54⅞″
7X to 12X	30⅛″	34¼″	43X to 48X	54⅞″	59″
13X to 18X	34¼″	38⅜″	49X to 54X	59″	63⅛″
19X to 24X	38⅜″	42½″	55X to 60X	63⅛″	67¼″
25X to 30X	42½″	46⅝″	61X to 66X	67¼″	71⅜″
31X to 36X	46⅝″	50¾″	67X to 72X	71⅜″	75½″

To find approximate Panelboard Weight multiply total "X Space" Units by 4.4 lbs.

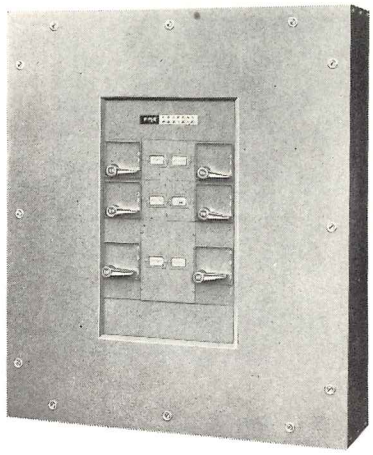
CLASS

1800 Circuit Breaker Distribution Panelboards factory assembled

FPE

WITH TYPES NEF-R, NFJ-R, NJL-R, AND NM-R THERMAL-MAGNETIC BRANCH BREAKERS

Type CDP



SERVICE VOLTAGE: 600 volts, A.C. or 250 volts, D.C.

MAIN LUGS: 1200 amp. max.

MAIN BREAKER: 800 amp. max.

BRANCHES: 1, 2, or 3 pole NEF-R and 2 or 3 pole NF-R, NFJ-R, NJL-R, and NM-R rotary handle circuit breakers in ratings from 15 to 800 amperes.

BOXES: Code gauge galvanized steel. Size is determined by frame size of circuit breakers as follows:

	Up to 225A	Over 225A
Cabinet Width	29″	38″
Cabinet Depth	8¾″	8¾″
Side Gutters	4½″	9″
End Gutters	Up to 400A 8″	Over 400A 12″

TRIMS: Code gauge steel, phosphatized and finished in gray enamel. Flush or surface trims available.
Surface type will be furnished unless otherwise specified.

DOOR: Door furnished as optional feature with rotary handle circuit breakers. Add $70. to Panel List Price. Increase box depth to 10¼″.

FEDERAL GOVERNMENT SPECIFICATIONS: These panelboards meet the requirements of WP-131A; Amendment No. 2, Classes A, C, D, and E.

To Determine Total List Price

1. Use correct base price for main lug or main breaker.
2. Add price and "X Units" for each Branch Circuit.
3. Add price and "X Units" for each space required for future circuits.
4. Add price of solid neutral bar, if required.
5. Add price and "X Units" of sub feeds and meter loops, if required.
6. Add price and "X Units" of special features from pages 68 and 69.
7. Add price and "X Units" of PMS Motor Starters, if required.
8. Total all prices—This is list price of panel.
9. Total "X Units" and select cabinet height to correspond with proper main bus size from cabinet dimension table.

Base List Price—Main Lugs Only

Capacity of Main Bus	LARGEST BRANCH BREAKER			
	NFJ-R 225A	NJL-R - NM-R 400A	NM-R 600A	NM-R 800A
225	**$ 86.00**	—	—	—
400	**108.00**	**$140.00**	—	—
600	**140.00**	**173.00**	**$208.00**	—
800	**173.00**	**208.00**	**273.00**	**$273.00**
1200	**238.00**	**273.00**	**347.00**	**347.00**

Base List Price—Main Breaker

No. of Poles	NFJ-R 225A	NJL-R 400A	NM-R 400A	NM-R 600A	NM-R 800A
2 Pole	**$279.00** (3X)	**$478.00** (6X)	**$508.00** (12X)	**$774.00** (12X)	**$1010.00** (12X)
3 Pole	**328.00** (3X)	**557.00** (6X)	**593.00** (12X)	**939.00** (12X)	**1226.00** (12X)

Branch Circuit List Prices

BREAKER			LIST PRICE			
Frame and Type	Trip Rating	No. Poles	250V. A.C. 250V. D.C.	480V. A.C. (NEF) 600V. A.C. 250V. D.C.	Space For Future	X Units
NEF-R*	15, 20, 30, 40, 50 Amp	1	**$19.50**	**$ 22.00**	**$ 5.50**	1X
		2	**39.50**	**62.00**	**6.50**	2X
		3	**56.00**	**80.00**	**8.50**	3X
	70, 100 Amp	2	**57.00**	**76.00**	**6.50**	2X
		3	**75.00**	**94.00**	**8.50**	3X
NF*	15, 20, 30 40, 50 Amp	2	—	**71.00**	**6.50**	3X
		3	—	**92.00**	**8.50**	3X
	70, 100 Amp	2	—	**87.00**	**6.50**	3X
		3	—	**108.00**	**8.50**	3X
NFJ-R*	125, 150, 175, 225 Amp	2	—	**193.00**	**8.50**	3X
		3	—	**242.00**	**8.50**	3X
NJL-R	250, 300, 350, 400 Amp	2	—	**338.00**	**13.00**	6X
		3	—	**417.00**	**18.50**	6X
NM-R†	250, 300, 350, 400 Amp	2	—	**368.00**	**37.00**	12X
		3	—	**453.00**	**37.00**	12X
	500, 600 Amp	2	—	**556.00**	**37.00**	12X
		3	—	**731.00**	**37.00**	12X
	700, 800 Amp	2	—	**737.00**	**37.00**	12X
		3	—	**953.00**	**37.00**	12X

† Interchangeable trip.

* **NOTE: Breakers of different frame sizes cannot be mounted opposite each other. Add X units for blank space when required.**

Main Amperes	SOLID NEUTRAL	SUB FEED LUGS		SPLIT BUS OR METER LOOP	
		Two Hot Bus Bars	Three Hot Bus Bars	Two Hot Bus Bars	Three Hot Bus Bars
225	**$25.00**	**$ 18.00**	**$ 24.00**	**$ 46.00** (12X)	**$ 55.00** (12X)
400	**32.00**	**37.00**	**43.00**	**55.00** (18X)	**65.00** (18X)
600	**46.00**	**65.00**	**72.00**	**65.00** (18X)	**72.00** (18X)
800	**65.00**	**92.00**	**102.00**	**92.00** (24X)	**102.00** (24X)
1200	**77.00**	**110.00**	**120.00**	**110.00** (24X)	**119.00** (24X)

Cabinet Dimension Table

Total "X Units"	CABINET HEIGHT	
	Up to and Including 400 Amp Mains	600 to 1200 Amp Mains
Up to 12X	35⅛″	43⅜″
13X to 24X	43⅜″	51⅝″
25X to 36X	51⅝″	59⅞″
37X to 48X	59⅞″	68⅛″
49X to 60X	68⅛″	76⅜″
61X to 72X	76⅜″	84⅝″
73X to 84X	84⅝″	92⅞″

When panelboard or box heights exceed these dimensions, estimate as two or more single panels adding sub-feed lugs to all but one panel.

To find approximate Panelboard weight multiply total "X Units" by 8.5 lbs.

PMS Starter Only Prices (Circuit Breaker Disconnect Not Included)

NEMA Size	STARTER HP 220V Left Unit	STARTER HP 220V Right Unit	STARTER HP 440V Left Unit	STARTER HP 440V Right Unit	CIRCUIT BREAKER SIZE AMP Left Unit 220V	CIRCUIT BREAKER SIZE AMP Left Unit 440V	CIRCUIT BREAKER SIZE AMP Right Unit 220V	CIRCUIT BREAKER SIZE AMP Right Unit 440V	LIST PRICE STARTER UNIT ONLY Wired	LIST PRICE STARTER UNIT ONLY Space Only	X Units
3-Pole Non-Reversing Class 4204 Starter											
0 - –	3	—	5	—	20	15	—	—	$ 145.00	$43.00	13X
0 - 0	3	3	5	5	20	15	20	15	224.00	43.00	13X
1 - –	7½	—	10	—	50	30	—	—	164.00	43.00	13X
1 - 0	7½	3	10	5	50	30	20	15	243.00	43.00	13X
1 - 1	7½	7½	10	10	50	30	50	30	250.00	43.00	13X
2 - –	15	—	25	—	70	50	—	—	231.00	58.00	20X
2 - 0	15	3	25	5	70	50	20	15	310.00	58.00	20X
2 - 1	15	7½	25	10	70	50	50	30	317.00	58.00	20X
2 - 2	15	15	25	25	70	50	70	50	360.00	58.00	20X
3 - –	30	—	50	—	125	100	—	—	424.00	86.00	24X
3 - 0	30	3	50	5	125	100	20	15	503.00	86.00	24X
3 - 1	30	7½	50	10	125	100	50	30	510.00	86.00	24X
3 - 2	30	15	50	25	125	100	70	50	553.00	86.00	24X
3 - 3	30	30	50	50	125	100	125	100	626.00	86.00	24X
4 - –	50	—	100	—	200	200	—	—	748.00	86.00	24X
4 - 0	50	3	100	5	200	200	20	15	827.00	86.00	24X
4 - 1	50	7½	100	10	200	200	50	30	834.00	86.00	24X
4 - 2	50	15	100	25	200	200	70	50	877.00	86.00	24X
4 - 3	50	30	100	50	200	200	125	100	950.00	86.00	24X
4 - 4	50	50	100	100	200	200	200	200	1164.00	86.00	24X
3-Pole Reversing Class 4224 Starter											
0	(220V) 3		(440V) 5		(220V) 20		(440V) 15		$280.00	$43.00	13X
1	7½		10		50		30		306.00	43.00	13X
2	15		25		70		50		433.00	58.00	20X
3	30		50		125		100		656.00	86.00	24X

Accessories for PMS Motor Starters

	List Price
Start-Stop Push button (wired)	$11.00
Forward-Reverse-Stop Push button (wired)	54.00
Selector Switch (wired)	11.00
Pilot Light (includes interlock when required)	36.00
Interlock (1-N.O.) (unwired)	16.00

List Prices Include Heaters; Units will be shipped with overload heaters.
Order heaters from Redi-Reference page 100.
Consult your local FPE field office for prices and dimensions on additional PMS Starters available.

Estimating Example

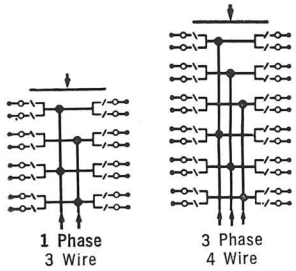
480V, 3ϕ, 3W

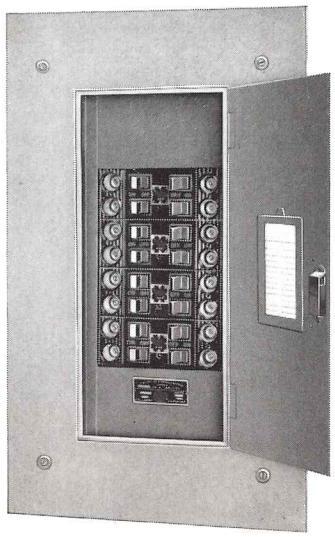
Base 800A 3P Main Circuit Breaker	$1226.00	12X
1—400A 3P NJLR Breaker	417.00	6X
1—250A 3P NJLR Breaker	417.00	6X
2—200A 3P NFJR Breaker	484.00	6X
1—150A 3P NFJR Breaker	242.00	3X
1— 3P NFJR Breaker Space	8.50	3X
2— 70A 3P NEFR Breaker	150.00	6X
4— 50A 3P NEFR Breaker	224.00	12X
2—Size 2 3P Class 4204 Starter	360.00	20X
2—Start-Stop Push button	22.00	—
2—Red Pilot Light	72.00	—
Total List Price	$3622.50	74X

Box Size 92⅞" H x 38" W x 8¾" D.

Type NT1P

1⌀ 3W. S/N, 125/250 volts A.C.
3⌀ 4W. S/N, 120/208 volts A.C.
125/250 volts D.C.





BRANCHES: Approved 30 ampere snap switch units complete with plug fuse holders in molded block.

BOXES: Code gauge galvanized steel, 16″ and 18″ wide by 4¾″ deep.

GUTTERS: Minimum 4″ side and 5″ ends.

TRIMS: Code gauge steel, phosphatized and finished in gray enamel. Flush or surface mounting trims are available. **Flush fronts will be furnished unless otherwise specified.**

FEDERAL GOVERNMENT SPECIFICATIONS: These panelboards meet the requirements of WP-146.

Mains: 1-Phase, 3-Wire, Lugs Only

No. of Poles	Amp Mains	Catalog Number	List Price	Box Height	Approx. Shipping Weight	Box Catalog Number
8	100	NT1P08-3L	$ 73.00	24″	54	B41624
12	100	NT1P12-3L	91.00	27″	60	B41627
16	100	NT1P16-3L	117.00	30″	70	B41630
20	100	NT1P20-3L	134.00	33″	76	B41633
24	200	NT1P24-3L	158.00	36″	82	B41636
28	200	NT1P28-3L	175.00	39″	98	B41639
32	200	NT1P32-3L	192.00	42″	104	B41642
36	200	NT1P36-3L	210.00	45″	110	B41645
40	200	NT1P40-3L	227.00	48″	116	B41648

Mains: 1-Phase, 3-Wire, 2 Pole Fusible Switch

No. of Poles	Amp Mains	Catalog Number	List Price	Box Height	Approx. Shipping Weight	Box Catalog Number
8	60	NT1P08-3F	$103.00	30″	74	B41630
12	60	NT1P12-3F	120.00	33″	80	B41633
16	100	NT1P16-3F	144.00	36″	92	B41636
20	100	NT1P20-3F	166.00	39″	98	B41639
24	200	NT1P24-3F	248.00	45″	136	B41645
28	200	NT1P28-3F	266.00	48″	142	B41648
32	200	NT1P32-3F	283.00	51″	148	B41651
36	200	NT1P36-3F	311.00	54″	154	B41654
40	200	NT1P40-3F	328.00	57″	160	B41657

Mains: 3-Phase, 4-Wire, Lugs Only

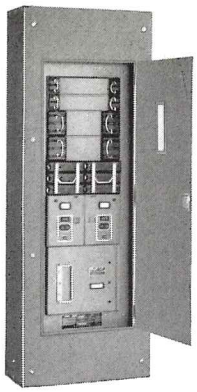
No. of Poles	Amp Mains	Catalog Number	List Price	Box Height	Approx. Shipping Weight	Box Catalog Number
—	—	—	—	—	—	—
12	100	NT1P12-4L	$102.00	27″	66	B41627
16	100	NT1P16-4L	119.00	30″	72	B41630
20	100	NT1P20-4L	145.00	33″	86	B41633
24	100	NT1P24-4L	162.00	36″	92	B41636
28	100	NT1P28-4L	179.00	39″	98	B41639
32	200	NT1P32-4L	205.00	42″	110	B41642
36	200	NT1P36-4L	222.00	45″	116	B41645
40	200	NT1P40-4L	240.00	48″	122	B41648

Mains: 3-Phase, 4-Wire, 3 Pole Fusible Switch

No. of Poles	Amp Mains	Catalog Number	List Price	Box Height	Approx. Shipping Weight	Box Catalog Number
—	—	—	—	—	—	—
12	60	NT1P12-4F	$131.00	33″	84	B41633
16	60	NT1P16-4F	148.00	36″	90	B41636
20	100	NT1P20-4F	203.00	39″	102	B41639
24	100	NT1P24-4F	220.00	42″	108	B41642
28	100	NT1P28-4F	238.00	45″	114	B41645
32	200	NT1P32-4F	303.00	55″	156	*B41855
36	200	NT1P36-4F	321.00	58″	162	*B41858
40	200	NT1P40-4F	338.00	61″	168	*B41861

* 18″ wide box

NOTES: 1. Dimensions are subject to change upon notification.
2. Cartridge fuse type panelboards and two-pole plug and cartridge fuse type panelboards are available on special order. Refer to Federal Pacific Field Office.
3. Modifications and special features available at increased cost. See pages 68 and 69.
4. All but 4 single poles can be made double pole by the use of special handle ties. List Price each — $1.25.



FLEXUNIT®

SERVICE VOLTAGE: 250 Volts A.C. or D.C., or 600 Volts A.C.

MAIN LUGS: 600 Amp Max.

MAIN SWITCH: 200 Amp Max.

BRANCHES: 250 Volt A.C. and D.C., 2- and 3-pole, 30 to 200 Amps.
600 Volt A.C. 2- and 3-pole, 30 to 100 Amps.

BOX: Code Gauge Galvanized Steel.

TRIM: Code Gauge Steel phosphatized and finished in gray enamel.
Flush or surface mounting trims available.
Surface Trims will be furnished unless otherwise specified.

FEDERAL GOVERNMENT SPECIFICATIONS: Meet the requirements of WP-146.

PRICING INFORMATION TO DETERMINE TOTAL LIST PRICE

1. Make layout as per instructions.
2. Use correct cabinet price.
3. Add price for each branch switch unit.
4. Add price of solid neutral bar, if required.
5. Add price for fillers required for future circuits.

Cabinet List Price

Main Lug Amps	250 VOLTS		600 VOLTS		Mounting Space in "X Units"	Weight Lbs.
	Cat. No.	List Price	Cat. No.	List Price		
200	PD2833	**$119.**	PD62833	**$119.**	12X	100
400	PD4948	**147.**	PD64948	**147.**	16X	140
400	PD4960	**173.**	PD64960	**173.**	24X	215
600	PD6966	**216.**	PD66966	**216.**	28X	250

Branch Circuit List Price

250 Volts

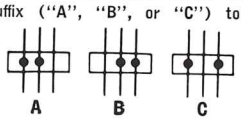
Type Branches	Amps	2 POLE†			3 POLE			Weight Lbs.
		Cat. No.	List Price	X Units	Cat. No.	List Price	X Units	
Double	30/30	PD8232†	**$29.**	2X	PD8233	**$ 39.**	2X	6
Double	30/60	PD82632†	**36.**	2X	PD82633	**50.**	3X	7
Double	60/60	PD8262†	**36.**	2X	PD8263	**50.**	3X	7
Double	100/100	PD8212†	**67.**	3X	PD8213	**93.**	4X	15
Single	200	PD8222†*	**73.**	6X	PD8223	**113.**	8X	27

600 Volts

Double	30/30	PD8632†	**$73.**	3X	PD8633	**$ 95.**	4X	15
Double	30/60	PD86632†	**73.**	3X	PD86633	**95.**	4X	15
Double	60/60	PD8662†	**73.**	3X	PD8663	**95.**	4X	15
Single	100	PD8612†	**76.**	6X	PD8613	**113.**	8X	27

† When ordering 2-Pole Flexunits, add correct suffix ("A", "B", or "C") to catalog number as indicated by diagrams.

* Use Suffix M when used as main switch.



Layout Instructions

To find cabinet height, list:

1. "X units" for each single or double branch switch including space for future branch switches, if required.
2. "X units" for main switch, if required.
3. Total above "X units" and select cabinet with proper voltage and main bus size from cabinet dimension table.

Cabinet Dimensions

250 Volts

Total "X Units"	200A. MAIN LUGS		400A. MAIN LUGS		600A. MAIN LUGS	
	Cat. No.	Box Height	Cat. No.	Box Height	Cat. No.	Box Height
Up to 12X	PD2833	33"	PD4948	48"	PD6966	66"
13X to 16X	—	—	PD4948	48"	PD6966	66"
17X to 24X	—	—	PD4960	60"	PD6966	66"
25X to 28X	—	—	—	—	PD6966	66"

600 Volts

Total "X Units"	200A. MAIN LUGS		400A. MAIN LUGS		600A. MAIN LUGS	
	Cat. No.	Box Height	Cat. No.	Box Height	Cat. No.	Box Height
Up to 12X	PD62833	33"	PD64948	48"	PD66966	66"
13X to 16X	—	—	PD64948	48"	PD66966	66"
17X to 24X	—	—	PD64960	60"	PD66966	66"
25X to 28X	—	—	—	—	PD66966	66"

Main Rating	Width	Depth	Side Gutter	Top Gutter	Bottom Gutter
200 Amp	24"	8¾"	4½"	4½"	4½"
400 and 600 Amp	24"	9½"	4½"	8"	8"

Filler Units

Catalog No.	Size in "X Units"	List Price
PD803	1X	**$1.25**
PD806	2X	**1.25**
PD809	3X	**2.25**
PD812	4X	**2.25**

Neutral Bar

Catalog No.	Neutral Rating Amp	No. of 100 Amp Branches	List Price
NB08	200	8	**$14.00**
NB12	400	12	**22.70**
NB18	400	18	**30.00**
NB618	600	18	**38.00**

PMS Twin Motor Starters — Class 4204, 3 Pole, Non-Reversing

Starter Size (NEMA)	MAX. H. P.		Fuse Size (Amp)		Starter Cat. No.		List Price	X Units
					Three Pole			
	220 V. A.C.	440 V. A.C.	Std.	Time Delay	220 V., A.C.	440 V., A.C.		
0	3	5	30	30	PMS4204-A-00-220	PMS4204-A-00-440	**$181.00**	13
1	7½	10	60	30	PMS4204-A-11-220	PMS4204-A-11-440	**207.00**	13

Accessories for PMS Motor Starters (Unwired)

Description	Catalog Number	List Price
Start-Stop Push button	5470AM1	**$12.00**
Selector Switch, H-O-A	5470AM2	**12.00**
Pilot Light, 110V, 220V, 440V	5470AM7	**24.00**

Notes:

* Heaters **not** included. Order heaters from Redi-Reference Page 100. Consult your FPE field office for prices and dimensions on additional PMS Starters available.

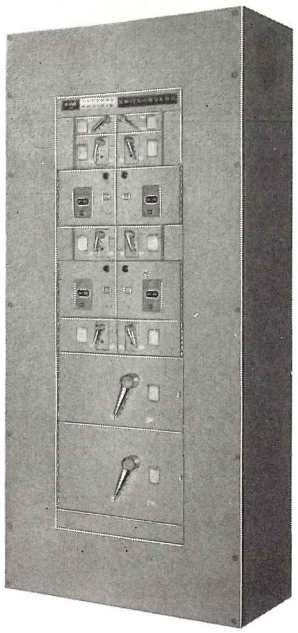
CLASS

1910 Fusible Distribution Panelboards — factory assembled

FPE

WITH QMQB FUSIBLE SWITCH UNITS UP TO 1200 AMPERES

Type QMQB CONVERTIBLE



SERVICE VOLTAGE: 600 V., A.C. or 250 V., D.C.
MAIN LUGS: 1200 amps. max.
MAIN SWITCH: 1200 amps. max.
BRANCHES: 2 and 3 pole Type QMQB Fusible Switches, 30 through 1200 amps.
CABINET: Code gauge galvanized steel. Size is determined by size of QMQB Switch as follows:

	Up to 100A.	Over 100A.
Cabinet Width	29″	38″
Cabinet Depth	8¾″	8¾″
Side Gutters	4½″	9″
End Gutters Up to 400A.	8″	Over 400A. 12″

TRIMS: Code gauge steel, phosphatized and finished in gray lacquer. Flush or surface trims available. **Surface Type will be furnished unless otherwise specified.**
DOOR: Door optional. Add $70 list and increase box depth to 12″.
FEDERAL GOVERNMENT SPECIFICATIONS: These panelboards meet the requirements of WP-146.

1. Use correct base price for main lug or main switch.
2. Add price and "X Units" for each branch circuit.
3. Add price and "X Units" for each space required for future circuits.
4. Add price of solid neutral bar, if required.
5. Add price and "X Units" of sub feeds and meter loops, if required.
6. Add price and "X Units" of special features from pages 68 and 69.
7. Add price and "X Units" of PMS Motor Starters, if required.
8. Total all prices. This is list price of panel.
9. Total "X Units" and select cabinet height to correspond with proper main bus size from cabinet dimension table.

Base List Price Main Lugs Only

Capacity of Mains	LARGEST BRANCH SWITCH				
	200 Amp.	400 Amp.	600 Amp.	800 Amp.	1200 Amp.
200 Amp.	**$ 86.00**	—	—	—	—
400 Amp.	**108.00**	**$140.00**	—	—	—
600 Amp.	**140.00**	**173.00**	**$208.00**	—	—
800 Amp.	**173.00**	**208.00**	**273.00**	**$273.00**	—
1200 Amp.	**238.00**	**273.00**	**347.00**	**347.00**	**$430.00**

Base List Price With Main Switch

	250 VOLT					600 VOLT				
	200 Amp.	400 Amp.	600 Amp.	800 Amp.	1200 Amp.	200 Amp.	400 Amp.	600 Amp.	800 Amp.	1200 Amp.
2P	**$198.** (14X)	**$386.** (14X)	**$591.** (16X)	**$825.** (46X)	**$1180.** (46X)	**$237.** (14X)	**$475.** (14X)	**$645.** (16X)	**$ 898.** (46X)	**$1280.** (46X)
3P	**243.** (14X)	**496.** (20X)	**711.** (24X)	**988.** (46X)	**1305.** (46X)	**287.** (14X)	**594.** (20X)	**759.** (24X)	**1083.** (46X)	**1420.** (46X)

Branch Circuit Switch List Prices

Type Switch	Main Switch Branch or Amps.	250 VOLTS			600 VOLTS		
		2 Pole	3 Pole	Space Only	2 Pole	3 Pole	Space Only
Double Branch Unit	30-30 (2¾″)	**$ 50.00** (4X)	**$ 65.00** (4X)	**$ 15.00** (4X)	—	—	—
	30-30 (5½″)	**60.00** (8X)	**82.00** (8X)	**24.00** (8X)	**$ 89.00** (8X)	**$108.00** (8X)	**$ 24.00** (8X)
	30-60	**60.00** (8X)	**82.00** (8X)	**24.00** (8X)	**89.00** (8X)	**108.00** (8X)	**24.00** (8X)
	60-60	**60.00** (8X)	**82.00** (8X)	**24.00** (8X)	**89.00** (8X)	**108.00** (8X)	**24.00** (8X)
	60-100	**91.00** (8X)	**114.00** (8X)	**24.00** (8X)	—	—	—
	100-100	**91.00** (8X)	**114.00** (8X)	**24.00** (8X)	—	—	—
Single Branch Unit	100	**45.00** (8X)	**57.00** (8X)	**24.00** (8X)	**67.00** (10X)	**86.00** (10X)	**37.00** (10X)
	200	**112.00** (14X)	**157.00** (14X)	**46.00** (14X)	**151.00** (14X)	**201.00** (14X)	**46.00** (14X)
	400	**246.00** (14X)	**356.00** (20X)	**70.00** (20X)	**335.00** (14X)	**454.00** (20X)	**70.00** (20X)
	600	**383.00** (16X)	**503.00** (24X)	**70.00** (24X)	**437.00** (16X)	**551.00** (24X)	**70.00** (24X)
	800*	**552.00** (46X)	**715.00** (46X)	**140.00** (46X)	**625.00** (46X)	**810.00** (46X)	**140.00** (46X)
	1200*	**750.00** (46X)	**875.00** (46X)	**140.00** (46X)	**850.00** (46X)	**990.00** (46X)	**140.00** (46X)

* Maximum 1 per panel.

Main Amps	SOLID NEUTRAL	SUB FEED LUGS		SPLIT BUS OR METER LOOP	
		Two Hot Bus Bars	Three Hot Bus Bars	Two Hot Bus Bars	Three Hot Bus Bars
200	**$25.00**	**$ 18.00**	**$ 24.00**	**$ 46.00** (12X)	**$ 55.00** (12X)
400	**32.00**	**37.00**	**43.00**	**55.00** (18X)	**65.00** (18X)
600	**46.00**	**65.00**	**72.00**	**65.00** (18X)	**72.00** (18X)
800	**65.00**	**92.00**	**102.00**	**92.00** (24X)	**102.00** (24X)
1200	**77.00**	**110.00**	**120.00**	**110.00** (24X)	**119.00** (24X)

Cabinet Dimensions

Total "X Units"	CABINET HEIGHT	
	Up to and Including 400 Amp Mains	600 to 1200 Amp Mains
Up to 12X	35⅛″	43⅜″
13X to 24X	43⅜″	51⅝″
25X to 36X	51⅝″	59⅞″
37X to 48X	59⅞″	68⅛″
49X to 60X	68⅛″	76⅜″
61X to 72X	76⅜″	84⅝″
73X to 84X	84⅝″	92⅞″

When panelboard or box heights exceed these dimensions, estimate as two or more single panels adding sub-feed lugs to all but one panel.

PMS Starter Only Prices (Fusible Switch Disconnect Not Included)

NEMA Size	STARTER HP 220V Left Unit	STARTER HP 220V Right Unit	STARTER HP 440V Left Unit	STARTER HP 440V Right Unit	FUSE SIZE—AMP DUAL ELEMENT FUSES Left Unit	FUSE SIZE—AMP DUAL ELEMENT FUSES Right Unit	LIST PRICE STARTER UNIT ONLY Wired	LIST PRICE STARTER UNIT ONLY Space Only	X Units
3-Pole Non-Reversing Class 4204 Starter									
0 - –	3	—	5	—	30	—	$ 145.00	$43.00	13X
0 - 0	3	3	5	5	30	30	224.00	43.00	13X
1 - –	7½	—	10	—	30	—	164.00	43.00	13X
1 - 0	7½	3	10	5	30	30	243.00	43.00	13X
1 - 1	7½	7½	10	10	30	30	250.00	43.00	13X
2 - –	15	—	25	—	60	—	231.00	58.00	20X
2 - 0	15	3	25	5	60	30	310.00	58.00	20X
2 - 1	15	7½	25	10	60	30	317.00	58.00	20X
2 - 2	15	15	25	25	60	60	360.00	58.00	20X
3 - –	30	—	50	—	100	—	424.00	86.00	24X
3 - 0	30	3	50	5	100	30	503.00	86.00	24X
3 - 1	30	7½	50	10	100	30	510.00	86.00	24X
3 - 2	30	15	50	25	100	60	553.00	86.00	24X
3 - 3	30	30	50	50	100	100	626.00	86.00	24X
4 - –	50	—	100	—	200	—	748.00	86.00	24X
4 - 0	50	3	100	5	200	30	827.00	86.00	24X
4 - 1	50	7½	100	10	200	30	834.00	86.00	24X
4 - 2	50	15	100	25	200	60	877.00	86.00	24X
4 - 3	50	30	100	50	200	100	950.00	86.00	24X
4 - 4	50	50	100	100	200	200	1164.00	86.00	24X
3-Pole Reversing Class 4224 Starter									
	(220 V)		(440 V)						
0	3		5		30		$ 280.00	$43.00	13X
1	7½		10		30		306.00	43.00	13X
2	15		25		60		433.00	58.00	20X
3	30		50		100		656.00	86.00	24X

Accessories for PMS Motor Starters

	List Price
Start-Stop Push button (Wired)	$11.00
Forward-Reverse-Stop Push button (Wired)	54.00
Selector Switch (Wired)	11.00
Pilot Light (Includes Interlock When Required)	36.00
Interlock (1-N.O.) (Unwired)	16.00

List Prices Include Heaters; Units will be shipped with overload heaters.
Order heaters from Redi-Reference page 100.
Consult your local FPE field office for prices and dimensions on additional PMS Starters available.

Estimating Example

480v 3ϕ 3w

Base 600A Main Switch	$ 759.00	24X
2—200A 3P QMQB Switch	402.00	32X
1—100A 3P QMQB Switch	86.00	10X
2—60A-60A twin 3P QMQB Switch	216.00	16X
6—30A-30A twin 3P QMQB Switch	648.00	48X
2—Size 1 3P PMS Starters	250.00	13X
2—Start-Stop Push buttons	22.00	—
	2383.00	143X (Double Panel)
Base (400 Amp Main Lugs Only)	140.00	
Subfeed Lugs	72.00	
Total List Price	$2595.00	

Box Size 84⅝"H x 76"W x 8¾"D

CLASS

1910 Fusible Distribution Panelboards factory assembled

FPE

WITH QMQB (H. P. RATED) SWITCH UNITS

Narrow Type QMQB

SERVICE VOLTAGE: 240 volts, A.C. or 250 volts, D.C.
MAIN LUGS: 600 amp. max.
MAIN SWITCH: 400 amp. max.
BRANCHES: 2 and 3 Pole QMQB Switch Units, 30, 60, 100 amp.
BOX: Code gauge galvanized steel, 24" wide by 6¾" deep.
TRIM: Code gauge steel, phosphatized and finished in gray enamel. Flush or surface trim available. **Flush trim will be furnished unless otherwise specified.**
DOOR: Furnished as optional feature. Add $60. to panel price. Increase Box Depth to 8½".
FEDERAL GOVERNMENT SPECIFICATIONS: These panelboards meet the requirements of WP-146.

Pricing Information
TO DETERMINE TOTAL LIST PRICE

1. Use correct Base Price.
2. Add price and "X units" for each Branch Switch Unit.
3. Add price and "X units" for each space required for future circuits.
4. Add price of solid neutral bar if required.
5. Add price and "X units" of Sub Feeds and Meter Loops if required.
6. Add price and "X units" of required Special Features from pages 68 and 69.
7. Add prices and "X units" of PMS Starters if required.
8. Add for accessories to PMS Starters.
9. Total all Prices. This is the List Price of the panel.
10. Total all "X Units" and select cabinet height (from Cabinet Dimension Table.)

Base List Price

Type of Main		60 Amp.	100 Amp.	200 Amp.	400 Amp.	600 Amp.
Lugs Only	2-Pole	$ 56.00	$ 56.00	$ 60.00	$ 82.00	$104.00
Lugs Only	3-Pole	67.00	67.00	73.00	97.00	119.00
Main Switch	2-Pole	99.00 (8X)	99.00 (8X)	172.00 (30X)	365.00 (30X)	—
Main Switch	3-Pole	124.00 (8X)	124.00 (8X)	230.00 (30X)	490.00 (30X)	—

Branch Circuit List Price

Branch Switch Amp.	Height	2 Pole	3 Pole	Space for Future Circuits
30-30	(2¾")	$43.00 (4X)	$59.00 (4X)	$15.00 (4X)
30-30	(5½")	55.00 (8X)	78.00 (8X)	22.00 (8X)
30-60	(5½")	55.00 (8X)	78.00 (8X)	22.00 (8X)
60-60	(5½")	55.00 (8X)	78.00 (8X)	22.00 (8X)
100	(5½")	43.00 (8X)	57.00 (8X)	27.00 (8X)

Sub Feeds (*Maximum: one per panel.)

Main Amp.	LUGS		SWITCH*	
	2 Hot Bus Bars	3 Hot Bus Bars	2 Pole	3 Pole
200	$11.00	$16.00	$112.00 (36X)	$157.00 (36X)
400	32.00	40.00	283.00 (36X)	393.00 (36X)
600	65.00	72.00		

PMS Starter Only Prices

Max. NEMA Size	STARTER HP 220V Left Unit	STARTER HP 220V Right Unit	STARTER HP 440V Left Unit	STARTER HP 440V Right Unit	FUSE SIZE—AMP DUAL ELEMENT FUSES Left Unit	FUSE SIZE—AMP DUAL ELEMENT FUSES Right Unit	LIST PRICE STARTER UNIT ONLY Wired	LIST PRICE STARTER UNIT ONLY Space Only	X Units
0 - –	3	—	5	—	30	—	$145.00	$43.00	13X
0 - 0	3	3	5	5	30	30	224.00	43.00	13X
1 - –	7½	—	10	—	30	—	164.00	43.00	13X
1 - 0	7½	3	10	5	30	30	243.00	43.00	13X
1 - 1	7½	7½	10	10	30	30	250.00	43.00	13X

3-Pole Non-Reversing with Class 4204 Starter

List prices include heaters: Units will be shipped with overload heaters.
Order heaters from Redi-Reference page 100.
Consult your local FPE field office for prices and dimensions on additional PMS Starters available.

Estimating Example

240v 3φ 3w		
Base 400A Main Lugs Only	$ 97.00	
2—100A 3 Pole	114.00	16X
2—60A-60A 3 Pole	156.00	16X
3—30A-30A 3 Pole Compact	177.00	12X
Total List Price	$544.00	44X
Box Size 59"H x 24"W x 6¾"D		

Solid Neutral Bar

Neutral Bar Amp.	List Price
100	$20.00
200	25.00
400	32.00
600	46.00

Split Bus or Meter Loop

Main Amp.	2 Hot Bus Bars	3 Hot Bus Bars
60	$26.00 (12X)	$37.00 (12X)
100	26.00 (12X)	37.00 (12X)
200	26.00 (12X)	37.00 (12X)
400	55.00 (18X)	65.00 (18X)
600	65.00 (18X)	72.00 (18X)

Cabinet Dimension Table

Total "X Units"	CABINET HEIGHT 200 Amp Mains	CABINET HEIGHT 400 & 600 Amp Mains
Up to 6X	26"	30⅛"
7X to 12X	30⅛"	34¼"
13X to 18X	34¼"	38⅜"
19X to 24X	38⅜"	42½"
25X to 30X	42½"	46⅝"
31X to 36X	46⅝"	50¾"
37X to 42X	50¾"	54⅞"
43X to 48X	54⅞"	59"
49X to 54X	59"	63⅛"
55X to 60X	63⅛"	67¼"
61X to 66X	67¼"	71⅜"
67X to 72X	71⅜"	75½"

Accessories for PMS Motor Starters (Wired)

Start-Stop Push button	$11.00
Forward-Reverse-Stop Push button	54.00
Selector Switch	11.00
Pilot Light	36.00
Interlock (1-N.O.)	16.00

Panelboard Data

Table 1. Panelboard Main Lugs (Wire Size and No. per Phase)

Main Amps	100A	225A	400A	600A	600A■	800A	1200A
Copper	1—#14 to 2/0	1—#6 to 300MCM	1—#4/0 to 600MCM or 2—#1/0 to 3/0	2—#3/0 to 500MCM	2—#4 to 600MCM 4—#1/0 to 3/0	2—#4/0 to 600MCM or 4—#1/0 to 250MCM	3—#4/0 to 600MCM
Aluminum	1—#14 to 2/0	1—#6 to 300MCM	1—#4/0 to 600MCM or 2—#1/0 to 250MCM	2—#3/0 to 500MCM	2—#4 to 600MCM or 4—#1/0 to 250MCM	2—#4/0 to 600MCM or 4—#1/0 to 250MCM	4—#4/0 to 600MCM

■ CDP only

Table 2. Main Breaker Frame Types

Type of Panel	50A	100A	225A	400A	600A	800A
NALP	NA	NA	NFJ-R	NJL-R	—	—
NBLP	NB	NB	NFJ-R	NJL-R	—	—
NHDP	NEF-R	NEF-R	NFJ-R	NJL-R	—	—
STABreaker	NE-S	NE-S NF-S	NJ-S	NJ-S	—	—
CDP	—	NEF-R	NFJ-R	NJL-R	NM-R	NM-R

Table 3. Circuit Breaker Lug Sizes

Frame	Amp	Maximum Wire Size
NEF	10-50 70-100	#4 #1/0
NF, HF, XF	15-100	#1/0
NFJ or HFJ	10-50 70-225	#1/0 #4/0
NJL	70-225 250-350 400	350 MCM 600 MCM Two #3/0
NM, HM, XKL, or XM	125-350 400-800	600 MCM Two 500 MCM Three 350 MCM

Table 4. Switch Lug Sizes

Switch Rating, Amp	Lug Size—per Phase
30	#14-4
60	#14-4
100	#8-0
200	#6-300 MCM
400	One #4—500 MCM and One #6—250 MCM
600	Two #4—500 MCM
800	Three #4—500 MCM
1200	Four #4—500 MCM

Panelboard Code Requirements

Column Type Panelboards used with cable troughs are subject to National Electrical Code Section 362-5 which reads "Wireways shall not contain more than 30 conductors at any cross section, unless the conductors are for signaling circuits or are controller conductors between a motor and its starter and used only for starting duty. The sum of the cross-sectional areas of all contained conductors at any cross-section of a wireway shall not exceed 20% of the interior cross-sectional area of the wireway."

Therefore, if the neutral bar is mounted in the panelboard, 3 feeder wires and 27 branch circuit wires or 4 feeder wires and 26 branch circuit wires are permitted. If a separate neutral wire is run for each circuit, the largest panelboard acceptable would be 12 circuits. However, if common neutral conductors are used, the number of circuits in the panelboard could be increased.

In view of this ruling, it is advantageous and more economical to have the neutral bar mounted in the pullbox. Under the Code ruling, it would then be permissible to run 2 feeder wires and 28 branch circuit wires or 3 feeder wires and 27 branch circuit wires in the cable trough.

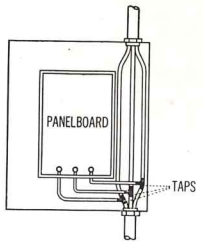
42 Circuit Rule—Underwriters' Laboratories Inc. defines an over-current device as a single fuse holder or circuit breaker pole; therefore, panelboards having more than 42 poles and covered by the following rulings must be built as two panelboards.

N. E. C. Paragraph 384-14—states "a lighting and appliance branch circuit panelboard is one having more than 10% of its overcurrent devices rated 30 amperes or less, for which neutral connections are provided."

N. E. C. Paragraph 384-15—states "not more than 42 overcurrent devices of a lighting and appliance branch circuit panelboard shall be installed in any one cabinet or cutout box."

"A two-pole circuit breaker shall be considered two overcurrent devices; a three-pole breaker shall be considered three overcurrent devices."

Panelboard Gutter Taps—N. E. C. Paragraph 240-15 states "overcurrent devices shall be located at the point where the conductor to be protected receives its supply." Exception No. 5 to this paragraph permits omission of the main overcurrent device if, "(1) the smaller conductor has a current-carrying capacity of not less than the sum of the allowable current-carrying capacities for conductors of the one or more circuits or loads supplied, (2) the tap is not over 10 feet long and does not extend beyond the switchboard, panelboard or control devices which it supplies."

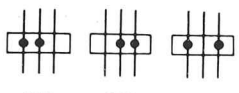


Gutter taps as illustrated are permitted under this ruling.

Mounting Hardware

Price includes necessary connection straps and hardware to mount circuit breaker in existing panel space. Add suffixes A, B or C per diagram to indicate connectors required for 1 and 2 pole kits. Order Circuit Breakers from Price List Class 1400.

Example: 1—3451-0560B kit. This will supply connectors and hardware for B and C phase bus bars for 2 pole NFJ-R circuit breaker.



Poles	Breaker Frame	PANEL TYPE NHDP Kit No.	NHDP List	CDP Kit No.	CDP List	Poles	Breaker Frame	PANEL TYPE CDP Kit No.	CDP List
1	NEF-R (100A)	3451-0566	**$4.00**	3451-0567	**$ 5.00**	—	—	—	—
2	NEF-R (100A)	3451-0558	**4.50**	3451-0559	**5.00**	2	NJL-R (400A)	3451-0561	**$25.00**
3	NEF-R (100A)	3452-0558	**6.00**	3452-0559	**7.50**	3	NJL-R (400A)	3452-0561	**37.50**
2	NF-R (100A)	—	—	3451-0743	**6.00**	—	—	—	—
3	NF-R (100A)	—	—	3452-0743	**9.00**	—	—	—	—
2	NFJ-R (225A)	—	—	3451-0560	**15.00**	2	NM-R (800A)	3451-0562	**55.00**
3	NFJ-R (225A)	—	—	3452-0560	**24.00**	3	NM-R (800A)	3452-0562	**82.00**

Touch-up paint for Panelboards—12 oz. Aerosol can.....**$3.50** list.

Lighting and Power Panelboards

FPE

LIST PRICE ADDITIONS FOR MODIFICATIONS AND OPTIONAL FEATURES

On items marked (*) deduct 25% when individual order calls for duplicate cabinets with same special features, or when a quantity of 10 or more assorted panelboards with same special features are involved.

Interior Special Features

SPF-1 Change Main Circuit Breaker Frame.
— Consult Factory for dimensions

Amps	From	To	2 Pole	3 Pole
125-225	NFJ-R	NM-R	$175.00	$211.00
250-400	NJL-R	NM-R	30.00	36.00

***SPF-2 "Lock Off" or "Lock On" Devices for NA and NB Breakers**

Non Padlocking	$1.00
Padlocking	3.00

SPF-3 Increased Main Bus Capacity. Lighting panels only.

Amps to Amps		Lugs Only	Fusible†	Circuit† Breaker
50 or 60 to 100	2 Pole	—	$ 25.00	$ 31.00
	3-Pole	—	35.00	44.00
50 or 60 to 200	2-Pole	$14.00	83.00	183.00
	3-Pole	14.00	105.00	225.00
100 to 200	2-Pole	14.00	75.00	165.00
	3-Pole	14.00	76.00	188.00

† Consult factory for dimensions.

SPF-4 Sub Feeds. (Limit—One per board)—Lighting panels only.

Amperes		Lugs Only	Fusible	Circuit Breaker
50 or 60	2-Pole	$11.00	$27.50 (18X)	$32.50 (12X)
	3-Pole	16.00	39.00 (18X)	47.50 (12X)
100	2-Pole	11.00	43.00 (24X)	52.50 (12X)
	3-Pole	16.00	57.00 (24X)	69.00 (12X)
200	2-Pole	11.00	112.00 (36X)	193.00 (18X)
	3-Pole	16.00	157.00 (36X)	242.00 (18X)

Note: Limit of 1 per panel except as follows:

Circuit Breaker	Max. No.	Box Depth
NEF 15-30 Amp.	4	5¾"
NEF 40-50 Amp.	3	5¾"
NEF 70-100 Amp.	2	6¾"

If addition of sub-feed requires increase in main bus capacity, see SPF-3.

SPF-5 Split Bus. Lighting panelboards.

Amperes	2 Hot Bus Bars	3 Hot Bus Bars
200 and below	$26.00 (9X)	$37.00 (9X)

SPF-6 Split Bus Distribution Panelboards

Type	Main Amp	Two Pole	Three Pole
NALP, NBLP	225 (200)	$ 26.00 (12X)	$ 37.00 (12X)
NHDP	400	55.00 (18X)	65.00 (18X)
Narrow QMQB	600	65.00 (18X)	72.00 (18X)
	225 (200)	46.00 (12X)	55.00 (12X)
CDP	400	55.00 (18X)	65.00 (18X)
and	600	65.00 (18X)	72.00 (18X)
QMQB	800	92.00 (24X)	102.00 (24X)
	1200	110.00 (24X)	119.00 (24X)

SPF-7 Feed Through Lugs. For Lighting Panelboards.

Amperes	Poles	List Price
50 or 60	2-Pole 3-Pole	$11.00 (12X)
100	2-Pole 3-Pole	11.00 (12X)
200 or 225	2-Pole 3-Pole	11.00 (12X)

SPF-8 Feeder Loop. Lighting Panelboards.

Amperes	2 Hot Bus Bars	3 Hot Bus Bars
200 and below	$26.00 (12X)	$37.00 (12X)

***SPF-9 Cadmium or Silver Plated Main Bus and Connecting Straps.**
per branch circuit pole. $2.00

SPF-10 Panelboard Interiors and Fronts to Fit Existing Boxes. The price of the panel interior and special front for these jobs will be the price of the complete standard panelboard, providing the existing box is the same depth as our standard. If the existing box is shallower or deeper than our standard, extra charges are made as follows:

a. Shallower box than standard—add: $46.00

b. Deeper box than standard—add: $22.00

SPF-11 Remote Control Switches. Price includes all necessary equipment except pushbutton controls.

Amp. Cap.	‡MECH. HELD ASCO Bul. 920		*ELEC. HELD ASCO Bul. 1035		X Units
	2-Pole	3-Pole	2-Pole	3-Pole	
30●	$143.00	$173.00	(Not Available)		6X
30	242.00	274.00	$192.00	$222.00	6X
60	289.00	340.00	256.00	288.00	6X
75	340.00	388.00	(Not Available)		6X
100	379.00	428.00	309.00	363.00	6X
150	556.00	625.00	506.00	606.00	6X
200	658.00	755.00	549.00	678.00	6X

● Light Duty. Automatic Switch Co. (Bulletin 909). 26X=18"
* May require increased box depth.
‡ NALP, NBLP, NT1P—add 15" to panel height.
NA1B, NH1B—add 16½" to panel height.

Enclosure Special Features

***SPF-12 Special Knockout Arrangements.** Ends and sides of boxes can be furnished, provided drilling template accompanies order. $ 11.00

***SPF-13 Increase Gauge Over Standard**

Maximum: 10-gauge.

A. Box only or front only	$ 27.00
B. Box and front	$ 37.00

***SPF-14 Special Finishes**

Hot Dipped Galvanized (Not recommended due to warping during processing.)

Box only or front only — not larger than 20" x 48"	$ 92.00
Box and front — not larger than 20" x 48"	$135.00
Box only or front only — not larger than 38" x 84"	$183.00
Box and front only — not larger than 38" x 84"	$236.00

Cadmium Plated

Box only or front only — under 24" wide	$ 37.00
Box and front — under 24" wide	$ 78.00
Box only or front only — 24" wide and over	$ 64.00
Box and front — 24" wide and over	$126.00

Debenode Painting
Same prices as cadmium plating.

***SPF-15 Special Paint**

Box, front or both $ 54.00

Special paint is any finish except aluminum, black, brown, crystallac grey, green or prime coat.

***SPF-16 Galvanized Sheet Steel Front** $ 35.00
Instead of plain steel front.

***SPF-17 Glass Door Panel in steel frame** $ 80.00

***SPF-18 Directory Special Frame.** Other than standard. $ 6.00
(Standard is pressed steel frame suitable for glass and card.)

***SPF-19 Spring Door Hinges.** Bommer, brass or iron (per pair). $ 8.00

***SPF-20 Special Locking Arrangements**

A. Vault handle 3 point catch (when not standard.)	$ 26.00
B. Extra lock on inner door of door-in-door panel.	$ 6.00
C. Special locks: Corbin No. 2510-2520; Yale No. 511-511S.	$ 25.00
D. Special locks: Corbin No. 2720; Yale No. R252, R274, 510S.	$ 12.00
E. Master-keying: applies only to special listed locks in groups C and D above. Locks can be Master-keyed only with other locks of same type number. Add per lock.	$ 2.00

Note: All Federal Pacific panelboards are keyed alike which provides master-keying without special locking arrangements.

***SPF-21 Increased Gutters and Depth over Standard.** In some cases it is desirable to provide through main feeder space in side gutters of panelboards. In these cases it may be necessary to provide increased side gutters to meet the requirements of maximum fill as outlined in paragraph 362-5 of the 1962 National Electrical Code.

A. For each 12" increase (or fraction thereof) in length (ends)	$ 37.00
B. For each 7" increase (or fraction thereof) in width (sides)	$ 37.00
C. For increased depth up to 8" maximum on lighting panels or 18" maximum on distribution panels	$ 37.00

***SPF-22 Weatherproof Cabinets** (box and trim phosphatized, zinc chromated and sprayed with 2 coats of gray lacquer—rubber gaskets for door and front).

A. Single door—Box width 20" or less	$102.00
B. Single door—Box width over 20"	$136.00
C. Door back to door—Box width 20" or less	$136.00
D. Door back to door—Box width over 20"	$205.00

***SPF-23 Dust-Resisting Cabinet.** Felt or rubber gaskets for door and front only.

A. Boxes—not over 20" wide	$ 54.00
B. Boxes—over 20" wide	$ 72.00

***SPF-24 Drip Proof Hoods for Panelboards**

A. Drip shield welded to top of box	$ 11.00
B. Drip shield welded to top of box and drip shield welded to trim above door.	$ 17.00

***SPF-25 Drilling of Box Front Only.** For Any Standard Wall-Mounting Wiring Devices (pilot lamps, tumbler switches). Mounting and device not included

A. First front with one space	$ 17.00
B. Each additional space in either first or additional fronts	$ 8.00

(Any devices installed in the gutter are in violation of U.L. requirements.)

***SPF-26 Drilling for instruments only (time clocks, etc.)**

Mounting and device not included.

A. When increase in box size is not required	$ 36.00
B. For larger, wider, or deeper boxes SPF-26, plus SPF-21A, B, or C as required	

***SPF-27 Special Front or Door Arrangements**

A. Non-standard door-in-door with one door over interior and additional door exposing wiring gutter.	$ 54.00
B. Double or split doors, one above the other.	$ 54.00

SPF-28 Addition for Current Transformer Space. TRANSFORMERS ARE NOT INCLUDED. Frequently power distribution panelboards require box space for Power Company's Current Transformers. See SPF-212C if increased box depth is required.

Box Depth Req'd.	Maximum Additional Box Height Req'd.	No. of Transformers	Maximum Transformer Rating	List Price
10"	21"	2 or 3	200 Amp.	$ 86.00
10"	21"	2 or 3	400 Amp.	86.00
10"	24"	2 or 3	600 Amp.	130.00
10"	24"	2 or 3	800 Amp.	130.00
10"	28"	2 or 3	1200 Amp.	173.00

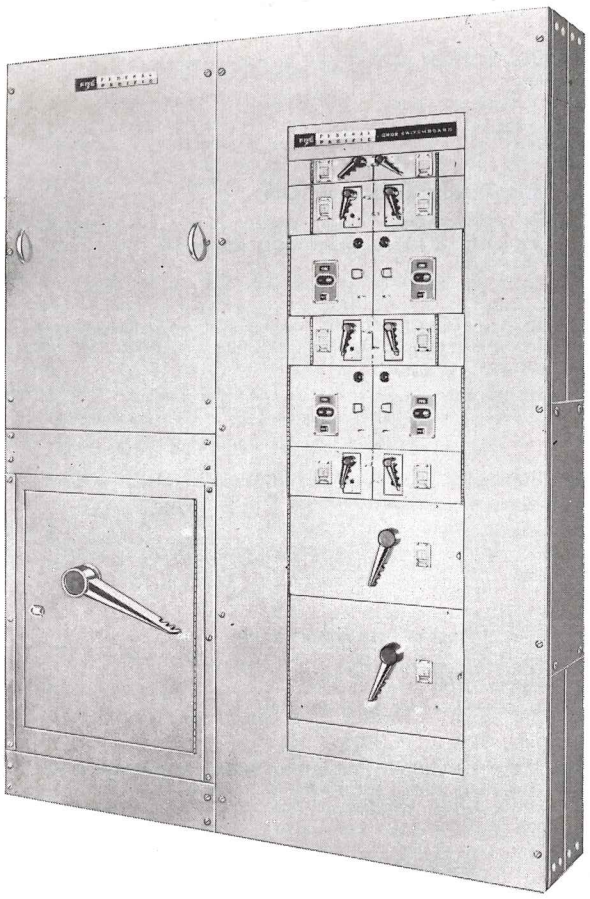
In cases where customers desire their transformers mounted and connected at the factory, the following price should be added to the charge for current transformer space. Transformers must be shipped to factory freight prepaid for mounting.

Maximum Rating	2 Transformers	3 Transformers
200 Amp.	$16.25	$ 33.00
400 Amp.	22.75	43.00
600 Amp.	31.00	66.00
800 Amp.	38.00	78.00
1200 Amp.	46.00	107.00

SPECIAL FEATURES SPF 1, 7, 8, 10, 11, 17, 21, 22, 25, 26, 27, 28 CANNOT BE APPLIED TO COLUMN TYPE PANELBOARDS.

only Federal Pacific switchboards

Group I shallow depth switchboards



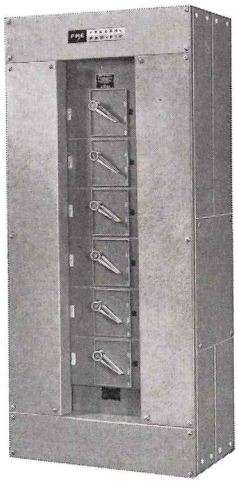
Only 14″ deep for space-saving economy. Full size conduit and wiring space keep installation cost low. Can be mounted anywhere—even against the wall since all parts are front accessible. Standardized design permits six basic structures to cover all switchboard requirements through 2,000 amperes. These modular sections can be combined to form a complete switchboard or can be mounted separately to form a free-standing panelboard or incoming service section.

A complete range of quality components meet all design requirements:

- **Rotary Handle Circuit Breakers through 800 amperes**
- **FP Air Circuit Breakers through 2,000 amperes**
- **QMQB Fusible Switches through 1,200 amperes**
- **SP-1 Fusible Switch through 2,000 amperes**
- **Bolted Pressure Switch through 2,000 amperes**
- **PMS Motor Starters through NEMA Size 4**

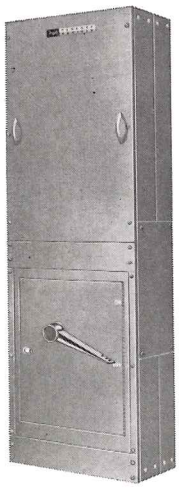
CIRCUIT BREAKER—METERING SECTION

Rotary handle main breakers up to 800 amperes are combined with standardized provisions for power company meters.



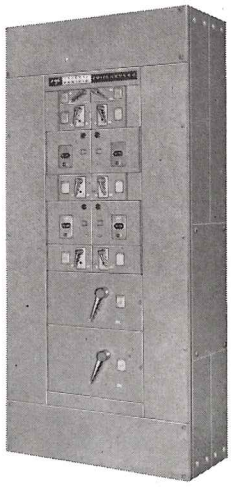
CIRCUIT BREAKER—DISTRIBUTION SECTION

Combine any of the four rotary handle circuit breakers for a free-standing distribution section, cross bussing up to 2,000 amp.



QMQB FUSIBLE SWITCH—METERING SECTION

Quick-make, quick-break fusible switches up to 1,200 amperes are combined with metering to match power company requirements.

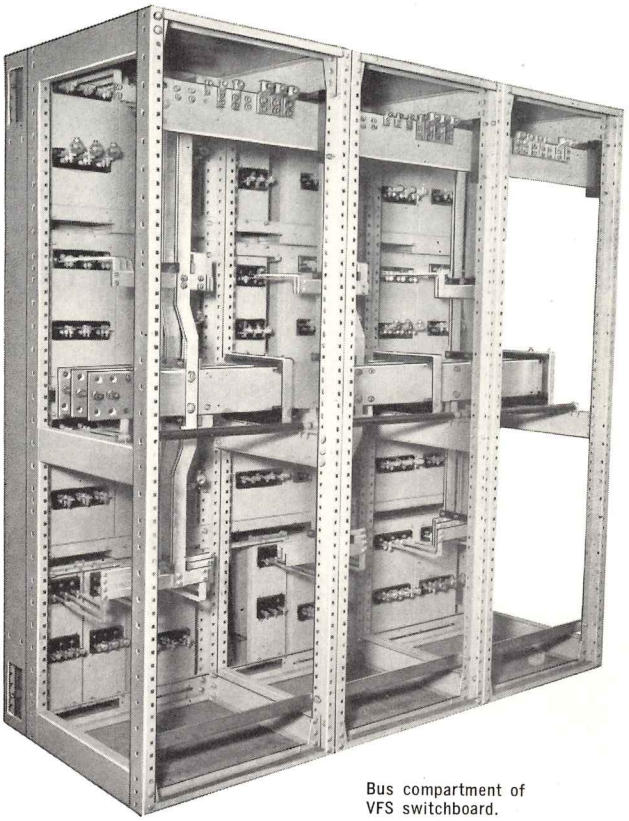


QMQB FUSIBLE SWITCH—DISTRIBUTION PANEL

From 30 to 1,200 amperes, the modular QMQB Fusible Switch can be combined to form a compact distribution section.

offer all of these quality features . . .

Group II and Group III switchboards



Bus compartment of VFS switchboard.

These switchboards are used on all modern heavy duty distribution systems. They provide a convenient assembly of over-current protective devices in one safe, flexible, totally-enclosed, free-standing unit. Federal Pacific Building Type Switchboards are used on service to 600 volts, having capacities to 6000 amperes. Through the use of modular, unit constructions, Federal Pacific Switchboards are easily tailored to your requirements.

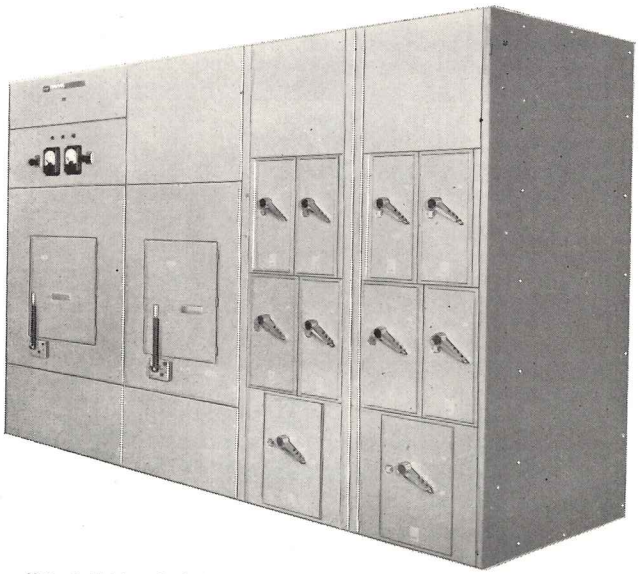
Rugged Construction with die formed, prepunched 11 gauge bolted channel frame, high impact bus supports, completely steel enclosed.

Modular Construction for easy interchangeability or additions. Front accessible units simplify installation, inspection, and maintenance.

Full Protection on systems up to 200,000 amperes fault currents with fusible switch units and circuit breakers with current limiting fuses. All switches will interrupt at least twelve times full rated current at rated voltage. Switch and bus sections isolated from each other.

Full Line of quality components:

- **QMQB Fusible Switches through 1200 amperes**
- **SP-1 Fusible Switches through 4000 amperes**
- **Bolted Pressure Switches through 5000 amperes**
- **Rotary Handle Circuit Breakers through 800 amperes**
- **FP Air Circuit Breakers through 4000 amperes**
- **Fusematic Circuit Breakers through 1600 amperes**



VFS Switchboard featuring SP-1 Fusible Switches to 4000 amperes and QMQB Fusible Switches to 1200 amperes, 250 and 600 volts.

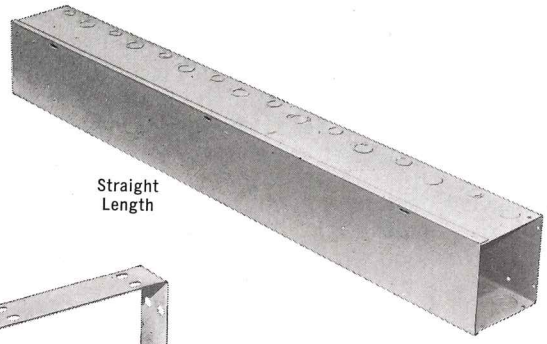
VCB Switchboard with Rotary Handle AB circuit breakers through 800 amperes, 250 and 600 volts.

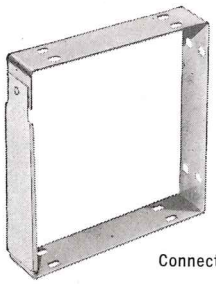
TYPE "AT" HINGED COVERED

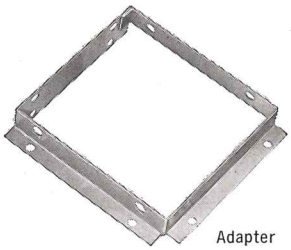
Unit	Size	Catalog Number	List Price	Standard Package	Est. Wt. Lbs.
STRAIGHT LENGTHS					
12"	4" x 4"	AT112	**$ 3.80**	1	3½
24"		AT124	**5.70**	1	7
36"		AT136	**9.00**	1	12½
48"		AT148	**11.40**	1	14
60"		AT160	**13.50**	1	16
12"	6" x 6"	AT412	**7.50**	1	6
24"		AT424	**9.50**	1	11½
36"		AT436	**13.50**	1	15
48"		AT448	**18.00**	1	20
60"		AT460	**20.20**	1	24
CONNECTOR with swivel side for laying in wire.	4" x 4"	AT51	**1.00**	10	5
	6" x 6"	AT54	**1.30**	10	7
ADAPTER Used to connect trough to panels or pull boxes.	4" x 4"	AT150	**2.30**	5	2
	6" x 6"	AT450	**3.50**	5	4
END WALL	4" x 4"	AT41	**0.90**	10	5
	6" x 6"	AT44	**1.50**	10	10
TEE and pull box with removable cover.	4" x 4"	AT165	**12.00**	1	3
	6" x 6"	AT465	**14.00**	1	4½
ELBOW 90° with removable cover.	4" x 4"	AT170	**8.50**	1	2½
	6" x 6"	AT470	**11.00**	1	4
UNIVERSAL DROP HANGER ASSEMBLY For suspending trough.	4" x 4"	AT195	**1.30**	5	1
	6" x 6"	AT495	**4.00**	5	4

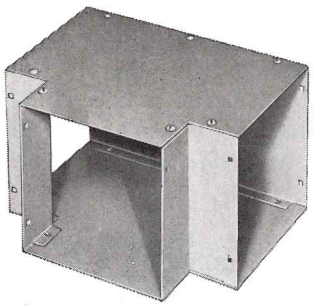
Type "AT" hinged covered wireway is a simplified and improved system for inexpensively and speedily enclosing feeder wires, groups of conductors and branch circuits. Hinged covers permit easy accessibility.

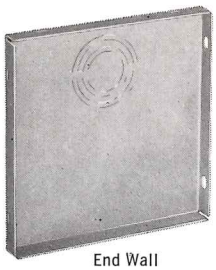
Each length of trough requires one connector. Finish, gray enamel.

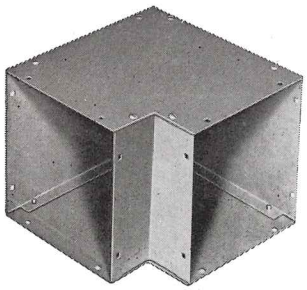

Straight Length

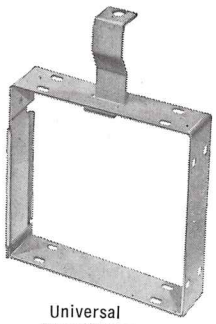

Connector


Adapter


Tee and Pull Box with Removable Cover


End Wall

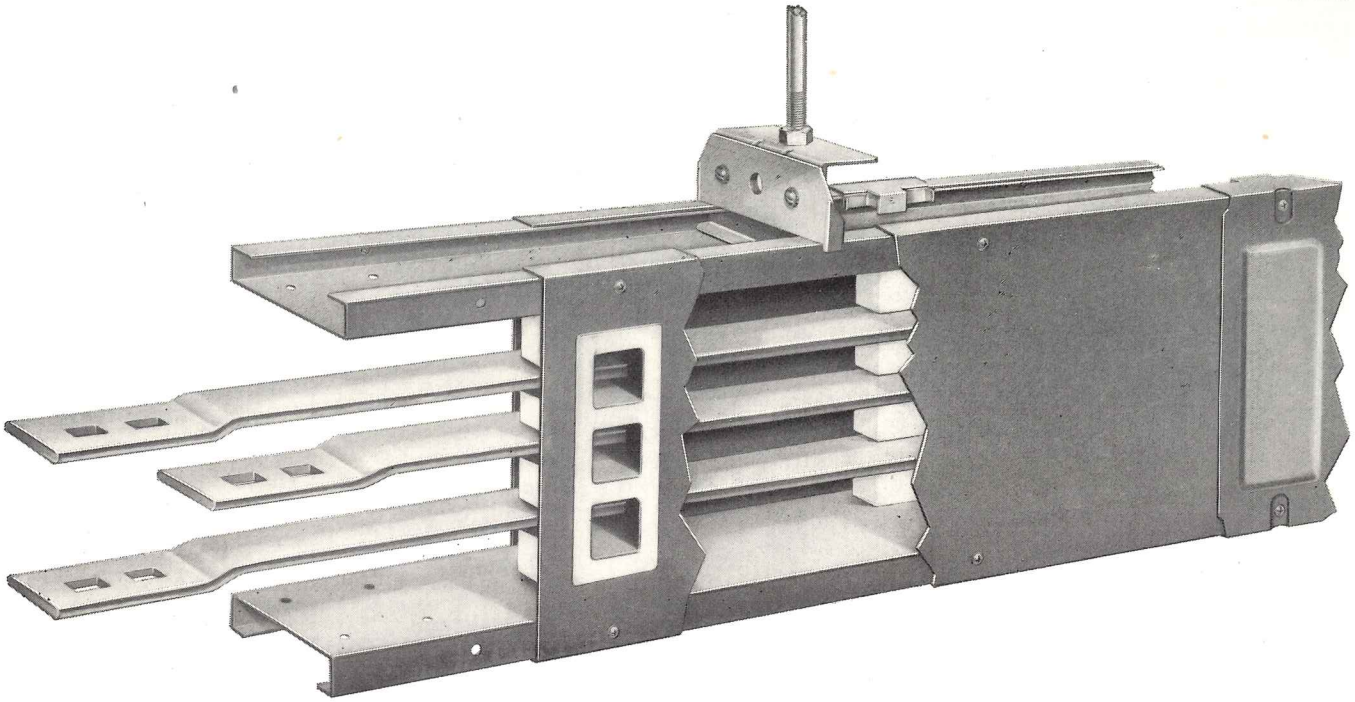

Elbow 90°


Universal Drop Hanger Assembly

NEC Conductor Table

Size of Conductor	Area of Conductor Types R RH & RW Sq. Inches	Maximum Number of Conductors all of One Size	
		4" x 4" Duct	6" x 6" Duct
14	.0230	139	313
12	.0278	115	259
10	.0460	69	156
8	.0760	42	94
6	.1238	25	58
4	.1605	19	44
3	.1817	17	39
2	.2067	15	34
1	.2715	11	26
0	.3107	10	23
00	.3578	8	20
000	.4151	7	17
0000	.4840	6	14
250,000	.5917	5	12
300,000	.6837	4	10
400,000	.8365	3	8
500,000	.9834	3	7

See Article 362—Wireways, N.E.C.



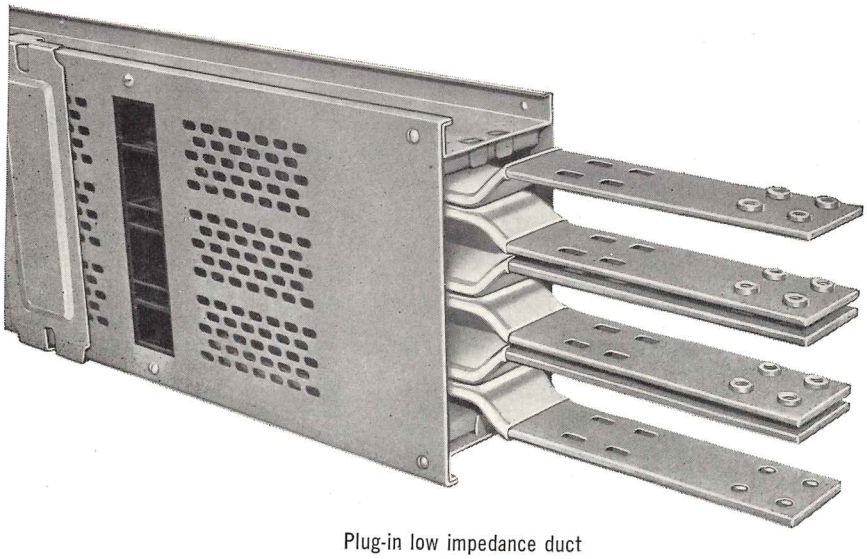
Plug-in duct

exclusive bus duct plug-in insulator

— the only way to obtain complete plug-in safety.

No mechanical shutters, levers, or gadgets are needed when you use Federal Pacific plug-in duct—because safety is built in. Plugging in through the insulators, that support the bus bars, protects installation and maintenance personnel. Contact with live parts is almost impossible because the bussing is deeply recessed inside the plug-in insulator support.

In addition, current take-off devices are automatically aligned with the bus bars because the plug-in units are guided into place by the plug-in insulator.



Plug-in low impedance duct

Plus these quality features:

Strength—Interlocked channel housing so strong that only one hanger every 10 feet is required for support.

Safety—All plug-in units are equipped with hook type hangers that ground the enclosure and support units on the duct until connected permanently.

Monolithic™ PVC Insulation on bussing of low impedance duct is self-extinguishing, resistant to most acids and alkalies, and has high dielectric strength.

Cool Operation—Silver-plated bus connections—positively bolted for cool trouble-free operation.

Economy — Tees and factory-assembled forward and rearward elbows are eliminated on feeder and plug-in low-impedance duct. Provisions for extra plug nuts allow current take off devices to be bolted on at any time.

CLASS

2445 Plug-in Bus Duct

FPE

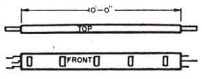
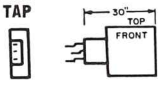
COPPER BUS BARS

List Prices Per Foot

Ampere Rating	BUS BAR IN INCHES		2-POLE		3-POLE		3-PHASE, 4 WIRE HN*		3-PHASE, 4 WIRE FN†	
	Size of Bar Per Pole	Cross Sectional Area Per Bar	List Price Per Foot	Weight Lbs.	List Price Per Foot	Wgt. Lbs. Per Foot	List Price Per Foot	Wgt. Lbs. Per Foot	List Price Per Foot	Wt. Lbs. Per Foot
225‡	⅛ x ⅞	0.109	**$10.00**	12.2	**$11.00**	12.6	**$14.00**	12.8	**$16.00**	12.8
400	¼ x 1½	0.375	**16.00**	14.5	**19.00**	15.9	**25.00**	16.6	**28.00**	17.3
600	¼ x 2	0.500	**19.00**	15.6	**24.00**	17.5	**30.00**	18.4	**37.00**	19.4
800	¼ x 3	0.750	**24.00**	18.0	**32.00**	21.1	**39.00**	22.6	**45.00**	24.4
1000	¼ x 4	1.000	**30.00**	20.5	**40.00**	24.5	**48.00**	26.4	**56.00**	28.5

‡ The 225 ampere rating has full size neutral in both 4 wire ducts.

List Prices Per Unit

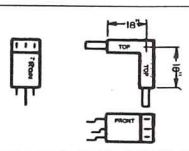
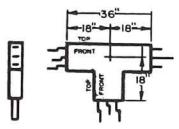
Type of Unit	Ampere Rating	600 VOLTS SINGLE PHASE 2 WIRE		600 VOLTS 3 PHASE 3 WIRE		277/480 VOLTS 3 PHASE, 4 WIRE HN*		277/480 VOLTS 3 PHASE, 4 WIRE FN†	
		Catalog No.	List Price	Catalog No.	List Price	Catalog No.	List Price	Catalog No.	List Price
STRAIGHT LENGTH PLUG-IN TYPE 	225	ST202	**$100.00**	ST203	**$110.00**	ST204	**$140.00**	ST2041	**$160.00**
	400	ST402	**160.00**	ST403	**190.00**	ST404	**250.00**	ST4041	**280.00**
	600	ST602	**190.00**	ST603	**240.00**	ST604	**300.00**	ST6041	**370.00**
	800	ST802	**240.00**	ST803	**320.00**	ST804	**390.00**	ST8041	**450.00**
	1000	ST1002	**300.00**	ST1003	**400.00**	ST1004	**480.00**	ST10041	**560.00**
		For feeder type straight lengths, replace prefix ST in catalog No. with prefix FST. **NOTE:** For shorter than 10 foot lengths, add length of section as suffix to catalog number. Example, a 6 foot piece of 225 A. 3-wire duct would be Cat. No. ST203-6.							
WALL OR SWITCHBOARD FLANGE	225	FG225	**42.00**	FG225	**42.00**	FG225	**42.00**	FG225	**42.00**
	400	FG400	**42.00**	FG400	**42.00**	FG400	**42.00**	FG400	**42.00**
	600	FG600	**42.00**	FG600	**42.00**	FG600	**42.00**	FG600	**42.00**
	800	FG800	**46.00**	FG800	**46.00**	FG800	**46.00**	FG800	**46.00**
	1000	FG1000	**46.00**	FG1000	**46.00**	FG1000	**46.00**	FG1000	**46.00**
STANDARD COPPER EXTENSIONS 6″	225		**9.00**		**11.00**		**19.00**		**25.00**
	400		**13.00**		**18.00**		**27.00**		**35.00**
	600		**17.00**		**23.00**		**34.00**		**45.00**
	800		**23.00**		**30.00**		**43.00**		**48.00**
	1000		**28.00**		**38.00**		**51.00**		**54.00**
RIGHT END CLOSER	225	RN202	**14.00**	RN203	**14.00**	RN204	**14.00**	RN2041	**14.00**
	400	RN402	**14.00**	RN403	**14.00**	RN404	**14.00**	RN4041	**14.00**
	600	RN602	**14.00**	RN603	**14.00**	RN604	**14.00**	RN6041	**14.00**
	800	RN802	**14.00**	RN803	**14.00**	RN804	**14.00**	RN8041	**14.00**
	1000	RN1002	**14.00**	RN1003	**14.00**	RN1004	**14.00**	RN10041	**14.00**
		For left end closer, replace prefix RN in catalog No. with prefix LN.							
RIGHT END CABLE TAP BOX 	225	REB202	**72.00**	REB203	**88.00**	REB204	**94.00**	REB2041	**130.00**
	400	REB402	**85.00**	REB403	**100.00**	REB404	**130.00**	REB4041	**150.00**
	600	REB602	**110.00**	REB603	**130.00**	REB604	**150.00**	REB6041	**180.00**
	800	REB802	**130.00**	REB803	**150.00**	REB804	**180.00**	REB8041	**200.00**
	1000	REB1002	**150.00**	REB1003	**180.00**	REB1004	**200.00**	REB10041	**220.00**
		For other types of end cable tap boxes, replace prefix REB in catalog No. as follows: Left end cable tap box—LEB. Front center cable tap box—FCB. Rear center cable tap box—RCB.							

* HN—half neutral. † FN—full neutral.

Weatherproof Roof Flanges.....**$200.00** List

Complete Unit and Fabrication Only Prices

"Complete Unit" price equals price of duct footage plus "fabrication only" prices.

Type of Unit	Ampere Rating	600 VOLTS SINGLE PHASE, 2-WIRE			600 VOLTS THREE PHASE, 3-WIRE			277/480 VOLTS THREE PHASE, 4-WIRE HN*			277/480 VOLTS THREE PHASE, 4-WIRE FN†		
		Catalog Number	List Price Complete	List Price Fabrication Only	Catalog Number	List Price Complete	List Price Fabrication Only	Catalog Number	List Price Complete	List Price Fabrication Only	Catalog Number	List Price Complete	List Price Fabrication Only
FORWARD ELBOW 	225	FE202	**$132.**	**$102.**	FE203	**$135.**	**$102.**	FE204	**$164.**	**$122.**	FE2041	**$170.**	**$122.**
	400	FE402	**150.**	**102.**	FE403	**159.**	**102.**	FE404	**197.**	**122.**	FE4041	**206.**	**122.**
	600	FE602	**159.**	**102.**	FE603	**174.**	**102.**	FE604	**212.**	**122.**	FE6041	**233.**	**122.**
	800	FE802	**174.**	**102.**	FE803	**198.**	**102.**	FE804	**239.**	**122.**	FE8041	**257.**	**122.**
	1000	FE1002	**192.**	**102.**	FE1003	**222.**	**102.**	FE1004	**266.**	**122.**	FE10041	**290.**	**122.**
		For other types of elbows, replace prefix FE in catalog No. with the following: Rearward elbow—RE. Upward elbow—UE. Downward elbow—DE.											
DOWNWARD TEE 	225	DT202	**167.**	**122.**	DT203	**172.**	**122.**	DT204	**207.**	**144.**	DT2041	**216.**	**144.**
	400	DT402	**194.**	**122.**	DT403	**208.**	**122.**	DT404	**256.**	**144.**	DT4041	**270.**	**144.**
	600	DT602	**208.**	**122.**	DT603	**230.**	**122.**	DT604	**279.**	**144.**	DT6041	**310.**	**144.**
	800	DT802	**230.**	**122.**	DT803	**266.**	**122.**	DT804	**319.**	**144.**	DT8041	**346.**	**144.**
	1000	DT1002	**257.**	**122.**	DT1003	**302.**	**122.**	DT1004	**360.**	**144.**	DT10041	**396.**	**144.**
		For other types of tees, replace prefix DT in catalog No. with the following: Forward tee—FT. Rearward tee—RT. Upward tee—UT.											

* HN—half neutral. † FN—full neutral.

Complete Unit and Fabrication Only Prices

Type of Unit	Span	Ampere Rating	600 VOLTS SINGLE PHASE, 2-WIRE Catalog No.	List Price Complete	List Price Fabrication Only	600 VOLTS THREE PHASE, 3 WIRE Catalog No.	List Price Complete	List Price Fabrication Only	277/480 VOLTS THREE PHASE, 4 WIRE HN Catalog No.	List Price Complete	List Price Fabrication Only	277/480 VOLTS THREE PHASE, 4 WIRE FN† Catalog No.	List Price Complete	List Price Fabrication Only
Right Downward Offset or Left Upward Offset	S=18"	225	DO202-18	$249.	$204.	DO203-18	$253.	$204.	DO204-18	$307.	$244.	DO2041-18	$316.	$244.
		400	DO402-18	276.	204.	DO403-18	289.	204.	DO404-18	356.	244.	DO4041-18	370.	244.
		600	DO602-18	289.	204.	DO603-18	312.	204.	DO604-18	374.	244.	DO6041-18	403.	244.
		800	DO802-18	312.	204.	DO803-18	348.	204.	DO804-18	419.	244.	DO8041-18	445.	244.
		1000	DO1002-18	339.	204.	DO1003-18	384.	204.	DO1004-18	460.	244.	DO10041-18	494.	244.
	S=24"	225	DO202-24	254.	204.	DO203-24	259.	204.	DO204-24	314.	244.	DO2041-24	324.	244.
		400	DO402-24	284.	204.	DO403-24	299.	204.	DO404-24	369.	244.	DO4041-24	384.	244.
		600	DO602-24	299.	204.	DO603-24	324.	204.	DO604-24	394.	244.	DO6041-24	429.	244.
		800	DO802-24	324.	204.	DO803-24	374.	204.	DO804-24	439.	244.	DO8041-24	469.	244.
		1000	DO1002-24	354.	204.	DO1003-24	404.	204.	DO1004-24	484.	244.	DO10041-24	524.	244.
	S=30"	225	DO202-30	259.	204.	DO203-30	264.	204.	DO204-30	321.	244.	DO2041-30	332.	244.
		400	DO402-30	292.	204.	DO403-30	308.	204.	DO404-30	381.	244.	DO4041-30	398.	244.
		600	DO602-30	308.	204.	DO603-30	336.	204.	DO604-30	409.	244.	DO6041-30	447.	244.
		800	DO802-30	336.	204.	DO803-30	390.	204.	DO804-30	458.	244.	DO8041-30	491.	244.
		1000	DO1002-30	369.	204.	DO1003-30	424.	204.	DO1004-30	508.	244.	DO10041-30	552.	244.
	For other offset types, replace prefix DO in catalog No. with following prefixes: Right forward offset or left rearward offset—FO. Right rearward offset or left forward offset—RO. Right upward offset or left downward offset—UO.													
Edgewise Cross		225	EC202	204.	144.	EC203	210.	144.	EC204	252.	168.	EC2041	264.	168.
		400	EC402	240.	144.	EC403	258.	144.	EC404	318.	168.	EC4041	336.	168.
		600	EC602	258.	144.	EC603	288.	144.	EC604	348.	168.	EC6041	390.	168.
		800	EC802	288.	144.	EC803	336.	144.	EC804	402.	168.	EC8041	438.	168.
		1000	EC1002	324.	144.	EC1003	384.	144.	EC1004	456.	168.	EC10041	504.	168.
	For flatwise cross, replace prefix EC in catalog No. with prefix FC.													
Expansion Joint Plug-in Type (Maximum 6 openings)		225	EX202	225.	125.	EX203	275.	165.	EX204	334.	194.	EX2041	354.	194.
		400	EX402	305.	145.	EX403	375.	185.	EX404	461.	211.	EX4041	391.	211.
		600	EX602	355.	165.	EX603	445.	205.	EX604	540.	240.	EX6041	610.	240.
		800	EX802	438.	198.	EX803	584.	264.	EX804	680.	290.	EX8041	740.	290.
		1000	EX1002	518.	218.	EX1003	697.	297.	EX1004	810.	330.	EX10041	890.	330.
	For feeder type expansion joint, replace prefix EX in catalog No. with prefix FEX.													
Transposition Joint		225				TJ203	240.	130.	TJ204	316.	176.	TJ2041	336.	176.
		400				TJ403	320.	130.	TJ404	426.	176.	TJ4041	456.	176.
		600				TJ603	370.	130.	TJ604	476.	176.	TJ6041	546.	176.
		800				TJ803	450.	130.	TJ804	566.	176.	TJ8041	626.	176.
		1000				TJ1003	530.	130.	TJ1004	656.	176.	TJ10041	736.	176.

Adapter Cubicles for Plug-In Duct — Complete Unit and Fabrication Only Prices

Type of Unit	AMPERE RATING OF BUS Main	AMPERE RATING OF BUS Load	2 WIRE Catalog Number	List Price Complete	List Price Fabrication Only	3 WIRE Catalog Number	List Price Complete	List Price Fabrication Only	3 PHASE 4 WIRE HN* Catalog Number	List Price Complete	List Price Fabrication Only	3 PHASE 4 WIRE FN† Catalog Number	List Price Complete	List Price Fabrication Only
Right Unfused Reducer Adapter	400	225	RR422	$ 87.	$62.	RR423	$ 92.	$ 64.	RR424	$123.	$ 88.	RR4241	$128.	$ 88.
	600	225	RR622	90.	68.	RR623	98.	70.	RR624	131.	96.	RR6241	136.	96.
	600	400	RR642	108.	68.	RR643	118.	70.	RR644	159.	96.	RR6441	166.	96.
	800	400	RR842	126.	86.	RR843	140.	92.	RR844	181.	118.	RR8441	188.	118.
	800	600	RR862	134.	86.	RR863	152.	92.	RR864	193.	118.	RR8641	211.	118.
	1000	400	RR1042	136.	96.	RR1043	152.	104.	RR1044	199.	136.	RR10441	223.	136.
	1000	600	RR1062	144.	96.	RR1063	164.	104.	RR1064	211.	136.	RR10641	249.	136.
	1000	800	RR1082	156.	96.	RR1083	184.	104.	RR1084	234.	136.	RR10841	276.	136.
	For left unfused reducer adapter, replace prefix RR in catalog No. with prefix LR.													

Molded Case Circuit Breaker Adapter Cubicle

Type of Unit	Volts	Breaker Frame	Max. Amp	2 POLE Cat. No.	2 POLE List Price	3 POLE Cat. No.	3 POLE List Price	3 PHASE 4 WIRE HN* Cat. No.	3 PHASE 4 WIRE HN* List Price	3 PHASE 4 WIRE FN† Cat. No.	3 PHASE 4 WIRE FN† List Price
Right Circuit Breaker Cubicle Adapter	600 Volts	FJ	225A	RC2226	$ 685.00	RC2236	$ 756.00	RC2246	$ 786.00	RC22461	$ 786.00
		JL	400A	RC4426	815.00	RC4436	894.00	RC4446	937.00	RC44461	937.00
		M	600A	RC6626	1108.00	RC6636	1328.00	RC6646	1363.00	RC66461	1363.00
		M	800A	RC8826	1332.00	RC8836	1512.00	RC8846	1560.00	RC88461	1560.00

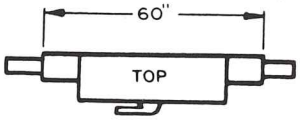
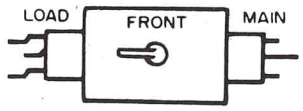
* HN—Half Neutral † Full Neutral

NOTE: Price includes main bus connections. Figure load duct footage through cubicle to compensate for load side connections if required.

COPPER BUS BARS

Safety Switch Adapter Cubicles Type A—List Prices for Complete Unit

(Suitable for both Plug-in and Low Impedance Bus Duct)

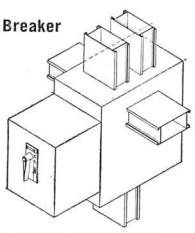
Type of Unit	Volts	Switch Size Amp	SINGLE PHASE 2 WIRE		THREE PHASE 3 WIRE		THREE PHASE 4 WIRE*	
			Cat. No.	List Price	Cat. No.	List Price	Cat. No.	List Price
Left Fused Switch Cubicle Adapter 	250 Volts	200	LS2222	**$ 523.00**	LS2232	**$ 546.00**	LS2242	**$ 583.00**
		400	LS4422	**583.00**	LS4432	**637.00**	LS4442	**693.00**
		600	LS6622	**661.00**	LS6632	**743.00**	LS6642	**806.00**
		800	LS8822	**883.00**	LS8832	**1022.00**	LS8842	**1108.00**
		1200	LS9922	**998.00**	LS9932	**1242.00**	LS9942	**1380.00**
	600 Volts	200	LS2226	**559.00**	LS2236	**583.00**	LS2246	**618.00**
		400	LS4426	**661.00**	LS4436	**702.00**	LS4446	**765.00**
		600	LS6626	**739.00**	LS6636	**823.00**	LS6646	**899.00**
		800	LS8826	**963.00**	LS8836	**1084.00**	LS8846	**1179.00**
		1200	LS9926	**1162.00**	LS9936	**1324.00**	LS9946	**1472.00**
All fusible switch cubicles which have 600 amp. switches and above have overall length of 72" instead of 60".	For right fused cubicle adapter, replace prefix LS in catalog No. with prefix RS.							

* Specify if full size neutral is required.
NOTE: Price includes main bus connections. Figure load bus duct footage through cubicle to compensate for load side connections if required.

Large Air Circuit Breaker Adapter Cubicles—List Prices for Complete Units

(Suitable for both plug-in and Low Impedance Bus Duct)

FP Circuit Breaker Cubicle



600 VOLTS A-C or 250 VOLTS D-C		Maximum Interrupting Rating Amperes	2-POLE	3-POLE*
Type Breaker	Ampere Rating		List Price	List Price
FP50-400	400	50,000	**$ 1740.00**	**$ 1840.00**
FP50-800	600 and 800	50,000	**2410.00**	**2610.00**
FP50-2000	1000	50,000	**3800.00**	**4200.00**
FP50-2000	1600	50,000	**3860.00**	**4270.00**
FP50-2000	2000	50,000	**4060.00**	**4570.00**
FP100-3000	3000	100,000	**8410.00**	**9860.00**
FP100-4000	4000	100,000	**11920.00**	**13870.00**

NOTE: Price includes line connections. Figure load duct footage through cubicle to compensate for load side connection if required.
* 4 Pole solid neutral same price. . .

Plug-In Bus Duct—Miscellaneous Parts

EXTRA LUGS

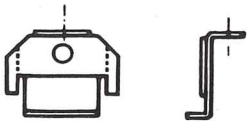
Cable Range	List Price Per Lug
2/0 to 4/0 in 4/0 lug	**$1.45**
1/0 to 350MCM in 350MCM lug	**2.40**
250 to 500MCM in 500 MCM lug	**4.90**
600 to 1000MCM in 1000MCM lug	**9.20**

—EXTRA INSULATORS FOR PLUG-IN DUCT

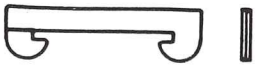
Description of Insulator (Porcelain)	List Price Per Insulator
Plug-in insulator for 3-phase 3 wire duct	**$3.45**
Plug-in insulator for 3-phase 4 wire ½ N duct	**3.45**
Plug-in insulator for 3-phase 4 wire FN duct	**3.45**
Feeder insulator for 3-phase 3 wire duct	**2.40**
Feeder insulator for 3-phase 4 wire ½ N duct	**2.40**
Feeder insulator for 3-phase 4 wire FN duct	**2.40**

EXTRA HANGERS

Drop Type Hanger



"C" Type Hanger



For Use On Duct Ratings In Amperes		2 Wire, 3 Wire & 3Ø 4 Wire HN & FN	List Price Each
Copper	Aluminum		
225	225	2DH	**$1.80**
400	—	4DH	**1.90**
600	400	6DH	**1.95**
800	600	8DH	**2.15**
1000	800	10DH	**2.35**
—	1000	15DH	**2.85**
All ratings 225 1000 A incl.		15CH	**$2.15**

Fire barrier for Plug-in duct where duct goes thru wall or floor, add $44.00 to list.

Plug-in duct with aluminum bars is identical in construction with plug-in duct using copper bars. The difference is in the ampere capacity of the bars. The aluminum bar sizes shown in the table below are in accordance with Underwriters' Laboratories, Inc. standards and all duct sections carry the Underwriters' label.

Three-phase four wire duct with ½ and full size neutral is rated at 277/480 volts. Two and three-pole duct is rated at 600 volts.

List Prices Per Foot

Ampere Rating	Bus Bar Size	Cross-Sectional Area of Bus Bar in inches	LIST PRICE PER FOOT							
			2-Pole	Wt. Lbs. Per Foot	3-Pole	Wt. Lbs. Per Foot	3-Phase 4 Wire HN	Wt. Lbs. Per Foot	3 Phase 4 Wire FN	Wt. Lbs. Per Foot
225	¼ x ⅞	0.218	$ 9.00	11	$10.00	12	$12.00	13	$13.00	13
400	¼ x 2	0.500	13.00	12	14.00	13	18.00	14	22.00	14
600	3/32 x 3	0.843	16.00	13	20.00	14	24.00	16	30.00	16
800	3/32 x 4	1.124	19.00	14	27.00	15	32.00	18	37.00	18
1000	3/32 x 6	1.686	24.00	16	32.00	18	40.00	22	45.00	22

Fittings—Fabrication only Prices

To obtain complete price, add the list price of the footage of duct through the units.

Ampere Rating	ELBOWS		TEES		CROSSES		TRANSPOSITION JOINT		EXPANSION JOINT			REDUCERS		
	2-Pole 3-Pole	3-Phase 4 Wire HN & FN	2-Pole 3-Pole	3-Phase 4-Wire HN & FN	2-Pole 3-Pole	3-Phase 4 Wire HN & FN	3-Pole	3-Phase 4 Wire HN & FN	2-Pole	3-Pole	3-Phase 4 Wire HN & FN	2-Pole	3-Pole	3-Phase 4 Wire HN & FN
225	$102.00	$122.00	$122.00	$144.00	$144.00	$168.00	$130.00	$176.00	$125.00	$165.00	$194.00	—	—	—
400	102.00	122.00	122.00	144.00	144.00	168.00	130.00	176.00	145.00	185.00	211.00	$62.00	$ 64.00	$ 88.00
600	102.00	122.00	122.00	144.00	144.00	168.00	130.00	176.00	165.00	205.00	240.00	68.00	70.00	96.00
800	102.00	122.00	122.00	144.00	144.00	168.00	130.00	176.00	198.00	264.00	290.00	86.00	92.00	118.00
1000	102.00	122.00	122.00	144.00	144.00	168.00	130.00	176.00	218.00	297.00	330.00	96.00	104.00	136.00

Weatherproof Barrier—$100. Fire Barriers—$44. list.

Fittings—List Prices for the Complete Unit

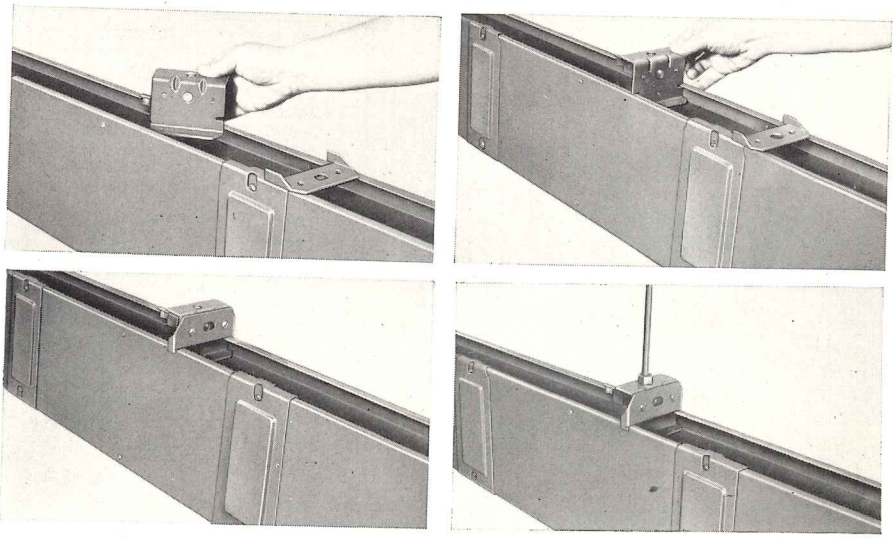
Ampere Rating	CABLE TAP BOXES				END CLOSER	FLANGE ONLY OR TRANSFORMER TAP OPENING	ALUMINUM BUS BAR EXTENSIONS UP TO 12" (Standard Lengths 8")			
	2-Pole	3-Pole	3-Phase 4 Wire HN	3-Phase 4 Wire FN	2-Pole, 3-Pole 3-Phase 4 Wire HN & FN	2-Pole, 3-Pole 3-Phase 4 Wire HN & FN	2-Pole	3-Pole	3-Phase 4 Wire HN	3-Phase 4 Wire FN
225	$ 72.00	$ 88.00	$ 94.00	$130.00	$14.00	$42.00	$ 9.00	$11.00	$19.00	$22.00
400	85.00	100.00	130.00	150.00	14.00	42.00	11.00	16.00	24.00	31.00
600	110.00	130.00	150.00	180.00	14.00	42.00	15.00	20.00	30.00	40.00
800	130.00	150.00	180.00	200.00	14.00	46.00	20.00	26.00	38.00	42.00
1000	150.00	180.00	200.00	220.00	14.00	46.00	25.00	34.00	45.00	48.00

Above prices include labor and material for unit.

Step-By-Step Assembly of Federal Pacific Drop-Type Hanger

Showing that it is unnecessary to line-up fixed hangers on duct with fixed overhead supports.

1. (Left) Set "Z-shape" plate of hanger into channel and twist.
2. (Right) Notches in "Z-shaped" plate engage channel construction.
3. (Left) Flat plate bolts to "Z-shaped" plate completing assembly. Hanger ready for alignment with overhead support.
4. (Right) Fasten supporting rod to hanger. Job is done.



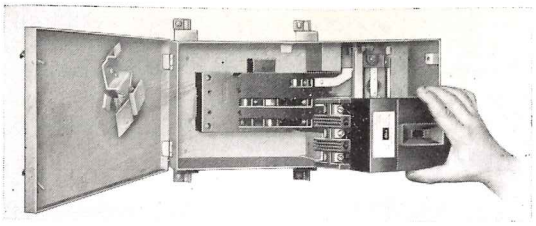
CLASS

2450 Plug-in Duct Current Take Off Devices

FPE

STABreaker® and CIRCUIT BREAKER TYPES

Type PBEF—STABreaker Plug-in Type AB Circuit Breakers with stabs. Provide additional flexibility and simplified maintenance. Both NE and NF frame breakers in ratings from 15 through 100 amps. can be "stabbed" into the same bus duct plug-in enclosure.—(Catalog No. PBEF-100.) STABreaker circuit breakers can be used in circuit breaker enclosures, in STABreaker Panelboards, as well as in Type PBEF Plug-ins—minimizing maintenance inventory.



STABreaker Plug-ins Type PBEF—(STABreaker plus Plug-in Enclosure = Complete Price)

Breaker Frame	Rating Ampere	240 V., A.C.—125/250 V., D.C. 2-Pole* Cat. No.	2-Pole* List Price	3-Pole Cat. No.	3-Pole List Price	PLUG-IN ENCLOSURE ONLY (minus Neutral Stab and STABreaker)	COMPLETE UNIT 2 Pole Cat. No.	2 Pole List Price	3 Pole Cat. No.	3 Pole List Price	3Ø 4W Cat. No.	3Ø 4W List Price
NE-S	15	2215	$28.00	2315	$41.00	Plug-in Enclosure PBEF100 $40.00	PBEF2215	$ 68.00	PBEF2315	$ 81.00	PBEF2315SN	$ 86.00
	20	2220	28.00	2320	41.00		PBEF2220	68.00	PBEF2320	81.00	PBEF2320SN	86.00
	30	2230	28.00	2330	41.00		PBEF2230	68.00	PBEF2330	81.00	PBEF2330SN	86.00
	40	2240	28.00	2340	41.00		PBEF2240	68.00	PBEF2340	81.00	PBEF2340SN	86.00
	50	2250	28.00	2350	41.00		PBEF2250	68.00	PBEF2350	81.00	PBEF2350SN	86.00
	70	2270	46.00	2370	60.00		PBEF2270	86.00	PBEF2370	100.00	PBEF2370SN	105.00
	100	2200	46.00	2300	60.00		PBEF2200	86.00	PBEF2300	100.00	PBEF2300SN	105.00
600 V., A.C.												
NF-S	15	4215	$60.00	4315	$77.00	Add $5.00 for Neutral Stab Cat. No. NP-100	PBEF4215	$100.00	PBEF4315	$117.00	PBEF4315SN	$122.00
	20	4220	60.00	4320	77.00		PBEF4220	100.00	PBEF4320	117.00	PBEF4320SN	122.00
	30	4230	60.00	4330	77.00		PBEF4230	100.00	PBEF4330	117.00	PBEF4330SN	122.00
	40	4240	60.00	4340	77.00		PBEF4240	100.00	PBEF4340	117.00	PBEF4340SN	122.00
	50	4250	60.00	4350	77.00		PBEF4250	100.00	PBEF4350	117.00	PBEF4350SN	122.00
	70	4270	76.00	4370	93.00		PBEF4270	116.00	PBEF4370	133.00	PBEF4370SN	138.00
	100	4200	76.00	4300	93.00		PBEF4200	116.00	PBEF4300	133.00	PBEF4300SN	138.00

* Before ordering these units, contact headquarters.

Shaded area indicates complete STABreaker Plug-in catalog numbers to be used for reference purposes only. These units are NOT shipped as complete devices.

Circuit Breaker Plug-ins—Type FCB (Factory Assembled)

Breaker Frame Size	Ampere Rating	600 VOLTS., A.C. or 250 VOLTS, D.C. 2-Pole* Catalog No.	2-Pole* List Price	600 VOLTS, A.C. 3-Pole Catalog No.	3-Pole List Price	277/480 VOLTS, A.C. 3-Phase, 4 Wire Catalog No.	3-Phase, 4 Wire List Price
NJL	70	FCBJL7026	$264.00	FCBJL7036	$311.00	FCBJL7036SN	$326.00
	100	FCBJL10026	264.00	FCBJL10036	311.00	FCBJL10036SN	326.00
	125	FCBJL12526	264.00	FCBJL12536	311.00	FCBJL12536SN	326.00
	150	FCBJL15026	264.00	FCBJL15036	311.00	FCBJL15036SN	326.00
	175	FCBJL17526	264.00	FCBJL17536	311.00	FCBJL17536SN	326.00
	200	FCBJL20026	264.00	FCBJL20036	311.00	FCBJL20036SN	326.00
	225	FCBJL22526	264.00	FCBJL22536	311.00	FCBJL22536SN	326.00
	250	FCBJL25026	374.00	FCBJL25036	441.00	FCBJL25036SN	456.00
	300	FCBJL30026	374.00	FCBJL30036	441.00	FCBJL30036SN	456.00
	350	FCBJL35026	374.00	FCBJL35036	441.00	FCBJL35036SN	456.00
	400	FCBJL40026	374.00	FCBJL40036	441.00	FCBJL40036SN	456.00
NM	125	FCBM12526	496.00	FCBM12536	556.00	FCBM12536SN	596.00
	150	FCBM15026	496.00	FCBM15036	556.00	FCBM15036SN	596.00
	175	FCBM17526	496.00	FCBM17536	556.00	FCBM17536SN	596.00
	200	FCBM20026	496.00	FCBM20036	556.00	FCBM20036SN	596.00
	225	FCBM22526	496.00	FCBM22536	556.00	FCBM22536SN	596.00
	250	FCBM25026	496.00	FCBM25036	556.00	FCBM25036SN	596.00
	300	FCBM30026	496.00	FCBM30036	556.00	FCBM30036SN	596.00
	350	FCBM35026	496.00	FCBM35036	556.00	FCBM35036SN	596.00
	400	FCBM40026	496.00	FCBM40036	556.00	FCBM40036SN	596.00
	450	FCBM45026	734.00	FCBM45036	802.00	FCBM45036SN	832.00
	500	FCBM50026	734.00	FCBM50036	802.00	FCBM50036SN	832.00
	550	FCBM55026	734.00	FCBM55036	802.00	FCBM55036SN	832.00
	600	FCBM60026	734.00	FCBM60036	802.00	FCBM60036SN	832.00
	700	FCBM70026	886.00	FCBM70036	1006.00	FCBM70036SN	1105.00
	800	FCBM80026	886.00	FCBM80036	1006.00	FCBM80036SN	1105.00

* Contact headquarters when all 2 poles installed.

Units 600 ampere and over are bolt-on units.

Plug-in Duct Current Take Off Devices

COVER OPERATED—TYPE A SAFETY SWITCH

Ampere Rating	250 VOLTS, A.C. or D.C. 2-Pole• H.P. A.C. D.C.	Catalog Number	List Price	250 VOLTS, A.C. 3-Pole H.P. A.C.	Catalog Number	List Price	600 VOLTS, A.C. 2-Pole H.P. A.C.	Catalog Number	List Price	600 VOLTS, A.C. 3-Pole H.P. A.C.	Catalog Number	List Price
Cover Operated Fusible Plug-In Device—CFP Series*												
30	1½-5	CFP322	$ 37.	3	CFP332	$ 39.	3	CFP326	$ 39.	7½	CFP336	$ 41.
60	3-10	CFP622	39.	7½	CFP632	43.	10	CFP626	41.	15	CFP636	45.
100	7½-20	CFP122	52.	15	CFP132	56.	15	CFP126	54.	30	CFP136	63.
200	15-40	CFP222	119.	25	CFP232	131.	30	CFP226	126.	50	CFP236	144.
Type A—Safety Switch Plug-In Device—SP Series*												
30	1½-5	SP1322	45.	3	SP1332	49.	3	SP1326	47.	7½	SP1336	50.
60	3-10	SP1622	50.	7½	SP1632	57.	10	SP1626	54.	15	SP1636	60.
100	7½-20	SP1122	76.	15	SP1132	84.	15	SP1126	80.	30	SP1136	87.
200	15-40	SP1222	134.	25	SP1232	148.	30	SP1226	148.	50	SP1236	156.
400	30-50	SP1422	278.	50	SP1432	305.	50	SP1426	293.	50	SP1436	320.
†600	—	SP1722	362.	—	SP1732	399.	—	SP1726	383.	—	SP1736	418.

• Two pole units are furnished with Plug-in stabs for the two outside bars in duct unless otherwise specified.

* Non-Fusible CFP and SP units available at 250-Volt prices.

† Not recommended for Plug-in service. These units bolt on to duct at splice between sections. When ordering, specify if front or rear mounted on duct and size of bars in duct on which units will be used.

NOTE: Fuses are not included.

Hook Stick— 8 ft.—**$18.** List
14 ft.—**$20.** List

For Solid Neutral, add

Amp	Catalog No.	List Price
30-100	NP100	$ 5.
200	NP200	15.
400	NP400	28.
600	NP600	30.

Plug-In Capacitors

	KVAR	Volts	WITH FUSIBLE PROTECTION Description	List Price	WITH CIRCUIT BREAKER PROTECTION Description	List Price
Capacitor Plug-in Device	5.0	230	Capacitor & CFP unit 60A	$650.	Capacitor & CBE unit 40A	$720.
	7.5	230	Capacitor & CFP unit 60A	790.	Capacitor & CBE unit 50A	860.
	5.0	460	Capacitor & CFP unit 60A	490.	Capacitor & CBF unit 15A	620.
	10.0	460	Capacitor & CFP unit 60A	640.	Capacitor & CBF unit 40A	770.
	15.0	460	Capacitor & CFP unit 60A	690.	Capacitor & CBF unit 50A	820.

Ground Detector and Neutralizer Plug-In

	Capacity Volts	Catalog Number	List Price
Neutralizer and Ground Detector Plug-in Device	230	GD-223	$76.
	460	GD-443	76.
	575	GD-573	76.

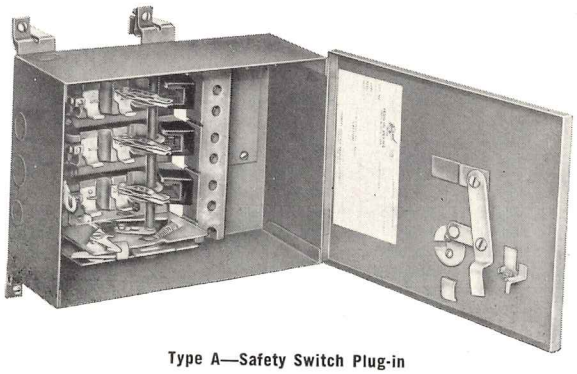
Neutral plug-in stab up to 100 amperes—**$5.00** List

Combination Plug-in Motor Starters with Breakers

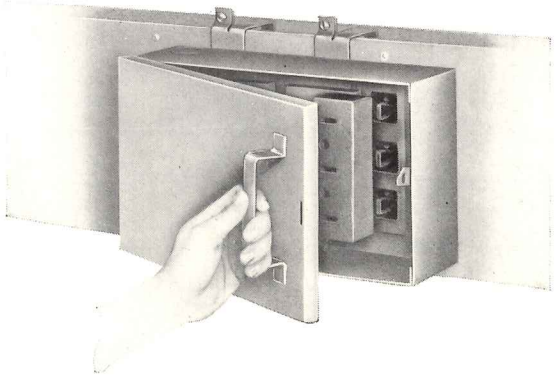
Size 0 ..... **$225.00** List Price
Size 1 ..... **233.00** List Price
Size 2 ..... **315.00** List Price

Plug-In Cable Tap Boxes

Box Size Amperes	3-POLE Cat. No.	Price	3-PHASE, 4 WIRE Cat. No.	Price
100	PTB-100	$132.	PTBN-100N	$140.
225	PTB-225	132.	PTBN-225N	140.
400	PTB-400	132.	PTBN-400N	140.



Type A—Safety Switch Plug-in



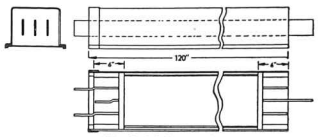
Cover Operated Plug-in

CLASSES
2460
2463 Weatherproof Duct

FEEDER AND LOW IMPEDANCE TYPES

CLASS
2460 Standard Feeder Duct Straight Lengths—List Prices per Foot‡

Ampere Rating	Size of Ø Bar & Full Neutral	Size of ½ Size Neutral	CATALOG NUMBERS AND LIST PRICES PER FOOT						
			2 Wire†	List Price	3 Wire†	List Price	4 Wire*† HN	List Price	List Price FN
400	1-¼″ x 1½″	1-⅛″ x 1½″	WST402	**$20.00**	WST403	**$30.00**	WST404	**$37.00**	**$47.00**
600	1-¼″ x 2″	1-⅛″ x 2″	WST602	**30.00**	WST603	**36.00**	WST604	**44.00**	**55.00**
800	1-¼″ x 3″	1-⅛″ x 3″	WST802	**39.00**	WST803	**47.00**	WST804	**56.00**	**65.00**
1000	1-¼″ x 4″	1-⅛″ x 4″	WST1002	**50.00**	WST1003	**57.00**	WST1004	**66.00**	**75.00**
1250‡	1-¼″ x 5″	1-⅛″ x 5″	WST1202	**60.00**	WST1203	**67.00**	WST1204	**75.00**	**85.00**
1500‡	1-¼″ x 6″	1-⅛″ x 6″	WST1502	**70.00**	WST1503	**77.00**	WST1504	**85.00**	**95.00**

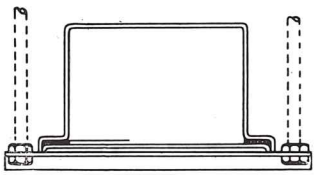


Straight Length

* Catalog number is for half size neutral 277/480 volts. If full size neutral is required, so specify.
† Catalog number denotes 10 ft. lengths although list price is on the per foot basis.

Feeder Duct Fittings

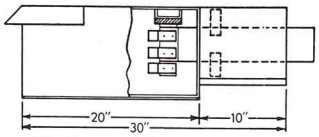
Ampere Rating	FOR FABRICATION ONLY						END CLOSER	FLANGES OR TRANSFORMER TAP OPENINGS	WEATHERPROOF BARRIER	COPPER EXTENSIONS	
	ELBOW		TEE		CROSSOVER						
	2 & 3 Wire	3 Ø 4 Wire Half & Full Neut.	2 & 3 Wire	3 Ø 4 Wire Half & Full Neut.	2 & 3 Wire	3 Ø 4 Wire Half & Full Neut.	2, 3, 4, & 4 Wire Full Neut.	2, 3, 4, & 4 Wire Full Neut.	2, 3, 4 & 4 Wire Full Neut.	2 & 3 Wire	4 Wire Half & Full Neut.
400	**$134.00**	**$169.00**	**$169.00**	**$202.00**	**$202.00**	**$238.00**	**$13.20**	**$46.00**	**$100.00**	**$18.00**	**$35.00**
600	**134.00**	**169.00**	**169.00**	**202.00**	**202.00**	**238.00**	**15.40**	**48.00**	**100.00**	**23.00**	**45.00**
800	**134.00**	**169.00**	**169.00**	**202.00**	**202.00**	**238.00**	**23.00**	**50.00**	**100.00**	**30.00**	**48.00**
1000	**134.00**	**169.00**	**169.00**	**202.00**	**202.00**	**238.00**	**25.00**	**52.00**	**100.00**	**38.00**	**54.00**
1250‡	**134.00**	**169.00**	**169.00**	**202.00**	**202.00**	**238.00**	**26.00**	**56.00**	**100.00**	**48.00**	**65.00**
1500‡	**134.00**	**169.00**	**169.00**	**202.00**	**202.00**	**238.00**	**28.00**	**59.00**	**100.00**	**60.00**	**80.00**


Mounting Method for Weatherproof Feeder Duct. Note Gasketing.

NOTE: Angle iron support furnished with every 5 feet of duct.

Feeder Duct End Cable Tap Boxes

Ampere Rating	Lugs Used Per Phase	Lugs Used For ½ N	CATALOG NO. 3 WIRE			CATALOG NO. 4 WIRE †			
			WRCTB Right End	WLCTB Left End	List Price	WRCTB Right End	WLCTB Left End	List Price	List Price Full Neut.
400	1-500MCM	1-4/0	403	403	**$132.00**	404	404	**$142.00**	**$162.00**
600	2-350MCM	1-350MCM	603	603	**132.00**	604	604	**142.00**	**162.00**
800	2-500MCM	1-500MCM	803	803	**178.00**	804	804	**191.00**	**218.00**
1000	3-500MCM	2-500MCM	1003	1003	**178.00**	1004	1004	**191.00**	**218.00**
1250‡	3-500MCM	2-500MCM	1203	1203	**314.00**	1204	1204	**330.00**	**363.00**
1500‡	4-500MCM	2-500MCM	1503	1503	**347.00**	1504	1504	**363.00**	**390.00**



Weatherproof End Cable Tap Box

† Catalog number is for ½ size neutral 277/480 volts. If a full size neutral is required, so specify.
The above prices are for Weatherproof duct using one uninsulated bar per phase.
Standard low impedance duct can be had in a totally enclosed weatherproof housing. The price is obtained by adding **$2.00** per foot to the price of totally enclosed low impedance duct.
Weatherproof Barrier, $100.00.

CLASS
2463 Low Impedance Ventilated Duct—(Copper)‡

55° C Temp. Rise Rating	BUS BAR		Cross Sect. of Bars per Ø	Ampere Rating	600 VOLTS		277/480 VOLTS	
	No.	Size in Inches			2 Pole List Price Per Foot	3 Pole List Price Per Foot	3Ø 4W ½N List Price Per Foot	3Ø 4W FN List Price Per Foot
800	2	¼ x 1	0.50	600	**$ 30.00**	**$ 40.00**	**$ 48.00**	**$ 55.00**
1000	2	¼ x 1½	0.75	800	**37.00**	**49.00**	**59.00**	**68.00**
1350	2	¼ x 2	1.00	1000	**49.00**	**65.00**	**79.00**	**92.00**
1600	2	¼ x 2½	1.25	1350	**60.00**	**79.00**	**96.00**	**110.00**
2000	2	¼ x 3	1.50	1600	**74.00**	**98.00**	**118.00**	**137.00**
2500	2	¼ x 4	2.00	2000	**92.00**	**122.00**	**148.00**	**172.00**
3000	2	¼ x 5	2.50	2500	**112.00**	**148.00**	**176.00**	**205.00**
3500	2	¼ x 6	3.00	3000	**135.00**	**178.00**	**211.00**	**259.00**
3500	4	¼ x 3	3.00	3000	**149.00**	**197.00**	**235.00**	**274.00**
4500	4	¼ x 4	4.00	4000	**167.00**	**222.00**	**264.00**	**308.00**
5500	4	¼ x 5	5.00	5000	**186.00**	**248.00**	**294.00**	**342.00**
Aluminum‡								
600	2	¼ x 1	0.50	—	**21.00**	**27.00**	**32.00**	**39.00**
800	2	¼ x 1½	0.75	600	**24.00**	**34.00**	**40.00**	**46.00**
1000	2	¼ x 2	1.00	800	**30.00**	**40.00**	**49.00**	**55.00**
1350	2	¼ x 2½	1.25	1000	**41.00**	**56.00**	**66.00**	**74.00**
1600	2	¼ x 3	1.50	1350	**48.00**	**67.00**	**79.00**	**91.00**
2000	2	¼ x 4	2.00	1600	**60.00**	**79.00**	**98.00**	**110.00**
2500	2	¼ x 6	3.00	2000	**76.00**	**100.00**	**122.00**	**138.00**
2750	4	¼ x 3	3.00	2500	**83.00**	**109.00**	**135.00**	**152.00**
3500	4	¼ x 4	4.00	3000	**90.00**	**119.00**	**148.00**	**166.00**
4000	4	¼ x 5	5.00	3500	**120.00**	**158.00**	**197.00**	**221.00**
4750	4	¼ x 6	6.00	4000	**150.00**	**198.00**	**245.00**	**276.00**

‡ This duct does not carry underwriter's labels.

Low Impedance Feeder Duct

COPPER BUS BARS

AMPERE RATING Duct Rated on 55°C Temperature Rise over Ambient	Cross Section Area of each bar in sq. in.	BUS BAR No.	BUS BAR Size in inches	AMPERE RATING Duct Rating Based on equivalent 1000 amp per sq. in. Density	600 VOLTS 2-Pole List Price per Foot	600 VOLTS 2-Pole Approx. Wt. per Ft. Lbs.	600 VOLTS 3-Pole List Price per Foot	600 VOLTS 3-Pole Approx. Wt. per Ft. Lbs.	277/480 VOLTS 3φ 4W H. N. List Price per Foot	277/480 VOLTS 3φ 4W H. N. Approx. Wt. per Ft. Lbs.	277/480 VOLTS 3φ 4W F. N. List Price per Foot	277/480 VOLTS 3φ 4W F. N. Approx. Wt. per Ft. Lbs.
Ventilated Housing												
800	0.50	2	¼ x 1	600	$ 25.00	13	$ 33.00	14	$ 40.00	16	$ 46.00	17
1000	0.75	2	¼ x 1½	800	31.00	15	41.00	18	49.00	20	57.00	22
1350	1.00	2	¼ x 2	1000	41.00	18	54.00	22	66.00	24	77.00	26
1600	1.25	2	¼ x 2½	1350	50.00	20	66.00	25	80.00	28	92.00	31
2000	1.50	2	¼ x 3	1600	62.00	23	82.00	28	98.00	31	114.00	33
2500	2.00	2	¼ x 4	2000	77.00	28	102.00	35	123.00	40	143.00	44
3000	2.50	2	¼ x 5	2500	93.00	32	123.00	42	147.00	48	171.00	54
3500	3.00	2	¼ x 6	3000	103.00	39	135.00	58	163.00	58	190.00	64
3500	3.00	4	¼ x 3	3000	103.00	42	135.00	58	163.00	58	190.00	63
4500	4.00	4	¼ x 4	4000	124.00	52	164.00	76	196.00	76	228.00	84
5500	5.00	4	¼ x 5	5000	155.00	59	205.00	92	245.00	92	285.00	103
Totally Enclosed Housing †												
600	0.50	2	¼ x 1	—	$ 25.00	13	$ 33.00	14	$ 40.00	16	$ 46.00	17
800	0.75	2	¼ x 1½	—	31.00	15	41.00	18	49.00	20	57.00	22
1000	1.00	2	¼ x 2	—	41.00	18	54.00	22	66.00	24	77.00	26
1350	1.50	2	¼ x 3	—	62.00	23	82.00	28	98.00	31	114.00	33
1600	2.00	2	¼ x 4	—	77.00	28	102.00	35	123.00	40	143.00	44
2000	2.50	2	¼ x 5	—	93.00	32	123.00	42	147.00	48	171.00	54
2250	3.00	4	¼ x 3	—	103.00	42	135.00	54	163.00	58	190.00	63
2640	4.00	4	¼ x 4	—	124.00	52	164.00	68	196.00	76	228.00	84
3300	5.00	4	¼ x 5	—	155.00	59	205.00	81	245.00	92	285.00	103

† For weatherproofing add $2.00 list per foot (all ratings).

Fittings—Fabrication Only

To obtain full price, add list price for number of feet of duct in each unit.

Number of Bus Bars Per Phase and Size	ELBOWS 2 or 3-Pole	ELBOWS 3φ 4 Wire HN or FN	TEES 2 or 3-Pole	TEES 3φ 4 Wire HN or FN	CROSSOVERS 2 or 3-Pole	CROSSOVERS 3φ 4 Wire HN or FN	REDUCERS (No Overload Protection) 2-Pole	REDUCERS (No Overload Protection) 3-Pole	REDUCERS (No Overload Protection) 3-Phase 4 Wire HN or FN	EXPANSION JOINTS 2-Pole	EXPANSION JOINTS 3-Pole	EXPANSION JOINTS 3-Phase 4 Wire HN	EXPANSION JOINTS 3-Phase 4 Wire FN
2—¼ x 1	$ 136.00	$ 170.00	$ 170.00	$ 202.00	$ 202.00	$ 236.00	$ 102.00	$ 140.00	$ 170.00	$ 158.00	$ 264.00	$ 317.00	$ 365.00
2—¼ x 1½	136.00	170.00	170.00	202.00	202.00	236.00	128.00	172.00	204.00	165.00	282.00	354.00	396.00
2—¼ x 2	136.00	170.00	170.00	202.00	202.00	236.00	140.00	192.00	228.00	172.00	293.00	372.00	436.00
2—¼ x 2½	136.00	170.00	170.00	202.00	202.00	236.00	168.00	224.00	264.00	242.00	396.00	482.00	528.00
2—¼ x 3	136.00	170.00	170.00	202.00	202.00	236.00	188.00	250.00	290.00	264.00	429.00	515.00	561.00
2—¼ x 4	136.00	170.00	170.00	202.00	202.00	236.00	228.00	316.00	380.00	286.00	462.00	548.00	607.00
2—¼ x 5	136.00	170.00	170.00	202.00	202.00	236.00	280.00	416.00	482.00	341.00	581.00	713.00	799.00
2—¼ x 6	136.00	170.00	170.00	202.00	202.00	236.00	330.00	490.00	574.00	495.00	702.00	825.00	917.00
4—¼ x 3	170.00	202.00	202.00	236.00	236.00	270.00	330.00	490.00	574.00	495.00	702.00	871.00	917.00
4—¼ x 4	170.00	202.00	202.00	236.00	236.00	270.00	408.00	618.00	738.00	554.00	739.00	871.00	964.00
4—¼ x 5	170.00	202.00	202.00	236.00	236.00	270.00	434.00	766.00	900.00	611.00	779.00	917.00	1003.00

Fittings—Complete Unit

Number & Size Bars Per Phase Fittings Are Used On	CENTER OR END CABLE TAP BOXES ‡ 2-Pole	CENTER OR END CABLE TAP BOXES ‡ 3-Pole	CENTER OR END CABLE TAP BOXES ‡ 3-Phase 4 Wire HN	CENTER OR END CABLE TAP BOXES ‡ 3-Phase 4 Wire FN	END CLOSERS 2 & 3-Pole 4 Wire HN & FN	FLANGE ONLY 2 & 3-Pole 4 Wire HN & FN	TRANSFORMER TAP OPENINGS *2 & 3-Pole 4 Wire HN & FN	COPPER EXTENSIONS UP TO 12" LONG (Standards are 8") 2-Pole	COPPER EXTENSIONS UP TO 12" LONG (Standards are 8") 3-Pole	COPPER EXTENSIONS UP TO 12" LONG (Standards are 8") 3-Phase 4 Wire HN	COPPER EXTENSIONS UP TO 12" LONG (Standards are 8") 3-Phase 4 Wire FN
2—¼ x 1	$ 130.00	$ 162.00	$ 178.00	$ 194.00	$ 22.00	$ 56.00	$ 82.00	$ 17.00	$ 39.00	$ 42.00	$ 45.00
2—¼ x 1½	138.00	172.00	184.00	196.00	24.00	58.00	90.00	23.00	51.00	55.00	62.00
2—¼ x 2	146.00	178.00	196.00	214.00	26.00	64.00	99.00	29.00	64.00	68.00	75.00
2—¼ x 2½	168.00	206.00	226.00	246.00	28.00	68.00	106.00	46.00	74.00	84.00	94.00
2—¼ x 3	176.00	214.00	238.00	262.00	30.00	70.00	117.00	55.00	92.00	99.00	109.00
2—¼ x 4	196.00	240.00	262.00	284.00	40.00	74.00	123.00	73.00	123.00	134.00	146.00
2—¼ x 5	216.00	268.00	290.00	312.00	42.00	80.00	134.00	95.00	156.00	173.00	185.00
2—¼ x 6	240.00	292.00	322.00	352.00	46.00	82.00	140.00	121.00	198.00	213.00	234.00
4—¼ x 3	240.00	292.00	322.00	352.00	46.00	82.00	140.00	121.00	198.00	213.00	234.00
4—¼ x 4	354.00	420.00	448.00	476.00	50.00	86.00	152.00	151.00	247.00	258.00	318.00
4—¼ x 5	385.00	477.00	495.00	513.00	55.00	95.00	163.00	166.00	268.00	280.00	360.00

‡ Add 50% to prices for weatherproofing.
* Add for extensions if required.
No lugs included.

Weatherproof Barrier $100. List. Fire stops $44. List (all ratings).

CLASS

2473 Low Impedance Feeder Duct

FPE

ALUMINUM BUS BARS

AMPERE RATING Duct Rated on 55°C Temperature Rise over Ambient	Cross Section Area of each bar in sq. in.	BUS BARS No.	BUS BARS Size in inches	AMPERE RATING Duct Rating Based on Equivalent 800 amp per sq. in. Density	600 VOLTS 2-Pole List Price per Ft.	600 VOLTS 2-Pole Approx. Wt. per Ft. Lbs.	600 VOLTS 3-Pole List Price per Ft.	600 VOLTS 3-Pole Approx. Wt. per Ft. Lbs.	277/480 VOLTS 3φ 4W HN List Price per Ft.	277/480 VOLTS 3φ 4W HN Approx. Wt. per Ft. Lbs.	277/480 VOLTS 3φ 4W FN List Price per Ft.	277/480 VOLTS 3φ 4W FN Approx. Wt. per Ft. Lbs.
Ventilated Housing												
600	0.50	2	¼ x 1	400	$ 17.00	9	$ 21.00	10	$ 25.00	11	$ 31.00	12
800	0.75	2	¼ x 1½	600	20.00	10	28.00	11	33.00	12	38.00	13
1000	1.00	2	¼ x 2	800	25.00	11	33.00	12	41.00	13	46.00	14
1350	1.25	2	¼ x 2½	1000	34.00	13	47.00	14	55.00	15	62.00	16
1600	1.50	2	¼ x 3	1350	40.00	14	56.00	15	66.00	16	76.00	17
2000	2.00	2	¼ x 4	1600	50.00	15	66.00	16	82.00	17	92.00	18
2500	3.00	2	¼ x 6	2000	63.00	17	83.00	18	102.00	20	115.00	22
2750	3.00	4	¼ x 3	2500	67.00	22	88.00	24	108.00	29	120.00	31
3500	4.00	4	¼ x 4	3000	75.00	29	99.00	31	123.00	34	138.00	36
4000	5.00	4	¼ x 5	3500	87.00	33	115.00	36	143.00	39	161.00	42
4750	6.00	4	¼ x 6	4000	100.00	37	132.00	42	164.00	45	184.00	49
Totally Enclosed Housing†												
600	0.75	2	¼ x 1½	—	$ 20.00	11	$ 28.00	12	$ 33.00	13	$ 38.00	14
800	1.00	2	¼ x 2	—	25.00	13	33.00	14	41.00	15	46.00	16
1000	1.50	2	¼ x 3	—	40.00	15	56.00	16	66.00	17	76.00	18
1350	2.50	2	¼ x 5	—	50.00	19	66.00	21	82.00	24	92.00	26
1600	3.00	2	¼ x 6	—	63.00	22	83.00	24	102.00	29	115.00	31
2000	4.00	4	¼ x 4	—	75.00	32	99.00	34	123.00	36	138.00	38
2500	6.00	4	¼ x 6	—	100.00	39	132.00	44	164.00	46	184.00	48

† For weatherproofing, add $2.00 list per foot (all ratings).

Fittings—Fabrication Only (To obtain full price, add list price for number of feet of duct in each unit.)

Number of Bus Bars per Phase and Size	ELBOWS 2 or 3-Pole	ELBOWS 3-Phase 4 Wire HN & FN	TEES 2 or 3-Pole	TEES 3-Phase 4 Wire HN & FN	CROSSOVERS 2 or 3-Pole	CROSSOVERS 3-Phase 4 Wire HN & FN	REDUCERS (No Overload Protection) 2-Pole	REDUCERS (No Overload Protection) 3-Pole	REDUCERS (No Overload Protection) 3-Phase 4 Wire HN & FN	EXPANSION JOINTS 2-Pole	EXPANSION JOINTS 3-Pole	EXPANSION JOINTS 3-Phase 4 Wire HN	EXPANSION JOINTS 3-Phase 4 Wire FN
2—¼ x 1	$ 136.00	$ 170.00	$ 170.00	$ 202.00	$ 202.00	$ 236.00	$ 102.00	$ 140.00	$ 170.00	$ 158.00	$ 264.00	$ 317.00	$ 365.00
2—¼ x 1½	136.00	170.00	170.00	202.00	202.00	236.00	128.00	172.00	204.00	165.00	282.00	354.00	396.00
2—¼ x 2	136.00	170.00	170.00	202.00	202.00	236.00	140.00	192.00	228.00	172.00	293.00	372.00	436.00
2—¼ x 2½	136.00	170.00	170.00	202.00	202.00	236.00	168.00	224.00	264.00	242.00	396.00	482.00	525.00
2—¼ x 3	136.00	170.00	170.00	202.00	202.00	236.00	188.00	250.00	290.00	264.00	429.00	515.00	561.00
2—¼ x 4	136.00	170.00	170.00	202.00	202.00	236.00	228.00	316.00	380.00	286.00	462.00	548.00	607.00
2—¼ x 5	136.00	170.00	170.00	202.00	202.00	236.00	280.00	416.00	482.00	341.00	581.00	713.00	799.00
2—¼ x 6	136.00	170.00	170.00	202.00	202.00	236.00	330.00	490.00	574.00	495.00	702.00	825.00	917.00
4—¼ x 3	170.00	202.00	202.00	236.00	236.00	270.00	377.00	554.00	617.00	528.00	721.00	848.00	941.00
4—¼ x 4	170.00	202.00	202.00	236.00	236.00	270.00	408.00	618.00	738.00	554.00	739.00	871.00	964.00
4—¼ x 5	170.00	202.00	202.00	236.00	236.00	270.00	434.00	766.00	900.00	611.00	779.00	917.00	1003.00
4—¼ x 6	170.00	202.00	202.00	236.00	236.00	270.00	470.00	840.00	980.00	671.00	814.00	963.00	1089.00

Weatherproof Barriers, $100. List. Fire stops $44. List (all ratings).

Fittings—Complete Unit

Number of Bus Bars per Phase and Size	CENTER OR END CABLE TAP BOXES‡ 2-Pole	CENTER OR END CABLE TAP BOXES‡ 3-Pole	CENTER OR END CABLE TAP BOXES‡ 3-Phase 4 Wire HN	CENTER OR END CABLE TAP BOXES‡ 3-Phase 4 Wire FN	END CLOSERS 2, 3, 4 Pole HN & FN	FLANGE ONLY 2, 3, 4 Pole HN & FN	TRANSFORMER TAP OPENINGS 2, 3, 4 Pole HN & FN	ALUMINUM BUS BAR EXTENSIONS 12" or Less 2-Pole	ALUMINUM BUS BAR EXTENSIONS 12" or Less 3-Pole	ALUMINUM BUS BAR EXTENSIONS 12" or Less 3-Phase 4 Wire HN	ALUMINUM BUS BAR EXTENSIONS 12" or Less 3-Phase 4 Wire FN
2—¼ x 1	$ 124.00	$ 154.00	$ 170.00	$ 186.00	$ 22.00	$ 56.00	$ 82.00	$ 13.00	$ 35.00	$ 36.00	$ 36.00
2—¼ x 1½	130.00	162.00	178.00	194.00	24.00	58.00	90.00	17.00	39.00	42.00	45.00
2—¼ x 2	138.00	172.00	184.00	196.00	26.00	64.00	99.00	23.00	51.00	55.00	62.00
2—¼ x 2½	146.00	178.00	196.00	214.00	28.00	68.00	106.00	29.00	64.00	68.00	75.00
2—¼ x 3	168.00	206.00	226.00	246.00	30.00	70.00	117.00	46.00	74.00	84.00	94.00
2—¼ x 4	176.00	214.00	238.00	262.00	40.00	74.00	123.00	55.00	92.00	99.00	109.00
2—¼ x 5	196.00	240.00	262.00	284.00	42.00	80.00	134.00	64.00	107.00	116.00	127.00
2—¼ x 6	216.00	268.00	290.00	312.00	46.00	82.00	140.00	73.00	123.00	134.00	146.00
4—¼ x 3	240.00	292.00	322.00	352.00	48.00	84.00	146.00	75.00	125.00	138.00	150.00
4—¼ x 4	250.00	302.00	330.00	360.00	50.00	86.00	152.00	95.00	156.00	173.00	185.00
4—¼ x 5	300.00	360.00	400.00	426.00	55.00	95.00	163.00	121.00	198.00	213.00	234.00
4—¼ x 6	354.00	420.00	448.00	476.00	60.00	100.00	175.00	151.00	247.00	258.00	318.00

‡ Add 50% to these prices for Weatherproofing.

Pricing of a Low Impedance Duct Run—Total the entire footage of the run or system from the switchgear or main overcurrent protection, including the footage of elbows and tees and crossovers for each ampere rating, and price on the footage basis. After that has been done, go back over the system and list flanges, bus extensions, elbows, tees, crossovers, expansion joints, unfused reducers and end closers, and price these fittings using fabrication only prices.

Elbows, Tees, Crossovers and Unfused Reducers—To obtain the complete prices of these units, add whatever footage is used through the units to the fabrication price.

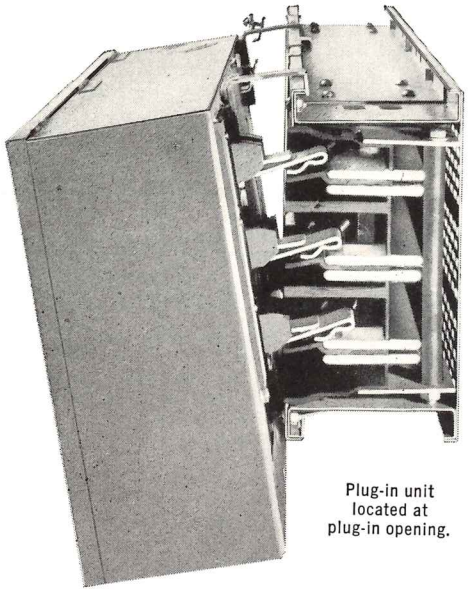
Offsets—Offsets are priced as two elbows.

Cable Tap Boxes—When a cable tap box is used at the end of a run, an end closer is not required.

Reducers (Unfused)—Unfused reducers, when used in agreement with the National Electrical Code, Article 364, are built into a section of duct. Use load bus rating to calculate duct footage.

Expansion Joints—Expansion joints are built into a section of duct. Footage of duct is figured through the joint. Price is for fabrication of flexible joint only.

Low Impedance Plug-in Duct, Plug-in Units



Plug-in unit located at plug-in opening.

Low impedance plug-in duct was designed to allow current take off points along the run of this feeder type duct. Standard low impedance duct is converted into L.I. plug-in duct by extending the bus bar supports through the front and back covers and by the removal of the insulation from one phase bar to accommodate a heavy duty plug-in stab. This is accomplished without disturbing the excellent characteristics of Federal Pacific Low Impedance Bus Duct.

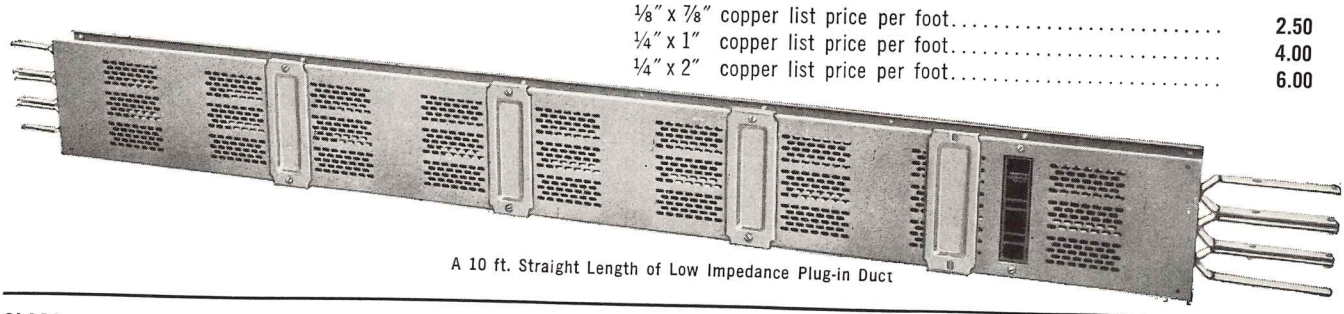
The standard number of openings per 10 foot section is eight—four openings per side. Unused openings are each covered by a slide plate. Fewer openings can be furnished; maximum number is ten.

To price low impedance plug-in duct, add the following prices per plug-in opening to straight length prices, given on page 81 (copper bus) and page 82 (aluminum bus).

	Add per opening
Two bars per phase:	
3 Wire	$3.00
4 Wire	4.00
Four bars per phase:	
3 Wire	6.00
4 Wire	8.00

The plug-in stabs of the low impedance plug-in units have safely withstood the short circuit stresses of 35,000 R.M.S. amperes. The plug-in units are available with either circuit breaker or fusible interiors. Special hangers required on plug-ins for use in ducts having 4 bars per phase. Consult pages 83 and 84 for prices of plug-in units.

External ground bus	
⅛″ x ⅞″ copper list price per foot	2.50
¼″ x 1″ copper list price per foot	4.00
¼″ x 2″ copper list price per foot	6.00



A 10 ft. Straight Length of Low Impedance Plug-in Duct

CLASS
2480

DISCOUNT SCHEDULE **X2**

Low Impedance STABreaker® Plug-in Type LPBEF—STABreaker plus Plug-in Enclosures = Complete Price

ORDERING INFORMATION

1. Whether plug-in unit is to be used horizontally or vertically.
2. Whether neutral on left or right side of plug-in unit.

Breaker Frame	Rating Ampere	240 V., A.C.—125/250 V., D.C. 2-Pole* Cat. No.	2-Pole* List Price	3-Pole Cat. No.	3-Pole List Price	PLUG-IN ENCLOSURE ONLY	COMPLETE UNIT 2 Pole Cat. No.	2 Pole List Price	3 Pole Cat. No.	3 Pole List Price	3Ø 4W Cat. No.	3Ø 4W List Price
NE-S	15	2215	$28.00	2315	$41.00	Plug-in Enclosure PBEF100 $40.00	LPBEF2215	$ 68.00	LPBEF2315	$ 81.00	LPBEF2315SN	$ 86.00
	20	2220	28.00	2320	41.00		LPBEF2220	68.00	LPBEF2320	81.00	LPBEF2320SN	86.00
	30	2230	28.00	2330	41.00		LPBEF2230	68.00	LPBEF2330	81.00	LPBEF2330SN	86.00
	40	2240	28.00	2340	41.00		LPBEF2240	68.00	LPBEF2340	81.00	LPBEF2340SN	86.00
	50	2250	28.00	2350	41.00		LPBEF2250	68.00	LPBEF2350	81.00	LPBEF2350SN	86.00
	70	2270	46.00	2370	60.00		LPBEF2270	86.00	LPBEF2370	100.00	LPBEF2370SN	105.00
	100	2200	46.00	2300	60.00		LPBEF2200	86.00	LPBEF2300	100.00	LPBEF2300SN	105.00
600 V., A.C.												
NF-S	15	4215	$60.00	4315	$77.00	Add $5.00 for Neutral Stab Cat. No. LNP400	LPBEF4215	$100.00	LPBEF4315	$117.00	LPBEF4315SN	$122.00
	20	4220	60.00	4320	77.00		LPBEF4220	100.00	LPBEF4320	117.00	LPBEF4320SN	122.00
	30	4230	60.00	4330	77.00		LPBEF4230	100.00	LPBEF4330	117.00	LPBEF4330SN	122.00
	40	4240	60.00	4340	77.00		LPBEF4240	100.00	LPBEF4340	117.00	LPBEF4340SN	122.00
	50	4250	60.00	4350	77.00		LPBEF4250	100.00	LPBEF4350	117.00	LPBEF4350SN	122.00
	70	4270	76.00	4370	93.00		LPBEF4270	116.00	LPBEF4370	133.00	LPBEF4370SN	138.00
	100	4200	76.00	4300	93.00		LPBEF4200	116.00	LPBEF4300	133.00	LPBEF4300SN	138.00

Shaded area indicates complete STABreaker Plug-in catalog numbers to be used for reference purposes only. These units are NOT shipped as complete devices.

NOTE: When bolting 2- or 3- pole NM breaker units to low impedance duct ..... add **$37.00** list
When bolting 2-pole and 3-pole NJL breaker units and 200 ampere fusible unit to low impedance duct ..... add **$25.00** list
When bolting 2-pole and 3-pole 100 ampere fusible units to low impedance duct ..... add **$20.00** list
When connecting neutral to these bolted units ..... add **$ 2.50** list

Low Impedance Plug-in Units

FPE

CIRCUIT BREAKERS—SWITCHES

CLASS
2480

Circuit Breaker Plug-ins—TYPE FCB (Factory assembled)

Breaker Frame Size	Ampere Rating	600 VOLTS, A.C. OR 250 VOLTS, D.C. 2 Pole•		600 VOLTS, A.C. 3 Pole		277/480 VOLTS, A.C. 3 Phase, 4 Wire	
		Catalog No.	List Price	Catalog No.	List Price	Catalog No.	List Price
NJL	70	LFCBJL7026	$264.00	LFCBJL7036	$ 311.00	LFCBJL7036SN	$ 326.00
	100	LFCBJL10026	264.00	LFCBJL10036	311.00	LFCBJL10036SN	326.00
	125	LFCBJL12526	264.00	LFCBJL12536	311.00	LFCBJL12536SN	326.00
	150	LFCBJL15026	264.00	LFCBJL15036	311.00	LFCBJL15036SN	326.00
	175	LFCBJL17526	264.00	LFCBJL17536	311.00	LFCBJL17536SN	326.00
	200	LFCBJL20026	264.00	LFCBJL20036	311.00	LFCBJL20036SN	326.00
	225	LFCBJL22526	264.00	LFCBJL22536	311.00	LFCBJL22536SN	326.00
	250	LFCBJL25026	374.00	LFCBJL25036	441.00	LFCBJL25036SN	456.00
	300	LFCBJL30026	374.00	LFCBJL30036	441.00	LFCBJL30036SN	456.00
	350	LFCBJL35026	374.00	LFCBJL35036	441.00	LFCBJL35036SN	456.00
	400	LFCBJL40026	374.00	LFCBJL40036	441.00	LFCBJL40036SN	456.00
NM	125	LFCBM12526	496.00	LFCBM12536	556.00	LFCBM12536SN	596.00
	150	LFCBM15026	496.00	LFCBM15036	556.00	LFCBM15036SN	596.00
	175	LFCBM17526	496.00	LFCBM17536	556.00	LFCBM17536SN	596.00
	200	LFCBM20026	496.00	LFCBM20036	556.00	LFCBM20036SN	596.00
	225	LFCBM22526	496.00	LFCBM22536	556.00	LFCBM22536SN	596.00
	250	LFCBM25026	496.00	LFCBM25036	556.00	LFCBM25036SN	596.00
	300	LFCBM30026	496.00	LFCBM30036	556.00	LFCBM30036SN	596.00
	350	LFCBM35026	496.00	LFCBM35036	556.00	LFCBM35036SN	596.00
	400	LFCBM40026	496.00	LFCBM40036	556.00	LFCBM40036SN	596.00
	450	LFCBM45026	734.00	LFCBM45036	802.00	LFCBM45036SN	832.00
	500	LFCBM50026	734.00	LFCBM50036	802.00	LFCBM50036SN	832.00
	550	LFCBM55026	734.00	LFCBM55036	802.00	LFCBM55036SN	832.00
	600	LFCBM60026	734.00	LFCBM60036	802.00	LFCBM60036SN	832.00
	700	LFCBM70026	886.00	LFCBM70036	1006.00	LFCBM70036SN	1105.00
	800	LFCBM80026	886.00	LFCBM80036	1006.00	LFCBM80036SN	1105.00

NOTE: Units 600 ampere and over and all NM frame breakers are bolt-on units.
Specify if plug-in units are for vertically or horizontally mounted duct.

CLASS
2485

Type A—Safety Switch Plug-in Device (LSP Series*)

Ampere Rating	250 VOLTS, A.C. OR D.C. 2-Pole •			250 VOLTS, A.C. 3-Pole			250 VOLTS, A.C. 3-Phase, 4 Wire			600 VOLTS, A.C. 2-Pole •			600 VOLTS, A.C. 3-Pole			277/480 VOLTS, A.C. 3-Phase, 4 Wire		
	H.P. A.C. D.C.	Catalog Number	List Price	H.P. A.C.	Catalog Number	List Price	H.P. A.C.	Catalog Number	List Price	H.P. A.C.	Catalog Number	List Price	H.P. A.C.	Catalog Number	List Price	H.P. A.C.	Catalog Number	List Price
30	1½-5	LSP1322	$45.	3	LSP1332	$49.	3	LSP1332SN	$59.	3	LSP1326	$47.	7½	LSP1336	$50.	5	LSP1336SN	$60.
60	3-10	LSP1622	50.	7½	LSP1632	57.	7½	LSP1632SN	66.	10	LSP1626	54.	15	LSP1636	60.	15	LSP1636SN	68.
100	7½-20	LSP1112	76.	15	LSP1132	84.	15	LSP1132SN	92.	15	LSP1126	80.	30	LSP1136	87.	25	LSP1136SN	97.
200	15-40	LSP1222	134.	25	LSP1232	148.	25	LSP1232SN	166.	30	LSP1226	148.	50	LSP1236	156.	50	LSP1236SN	173.
400	30-50	LSP1422	278.	50	LSP1432	305.	50	LSP1432SN	335.	50	LSP1426	293.	50	LSP1436	320.	50	LSP1436SN	348.
†600	—	LSP1722	362.	—	LSP1732	399.	—	LSP1732SN	426.	—	LSP1726	383.	—	LSP1736	418.	—	LSP1736SN	445.

* Non-Fusible LSP units available at 250-Volt prices.
† Not recommended for Plug-in service. These units bolt on to duct at splice between sections. When ordering, specify if front or rear mounted on duct and size of bars in duct on which units will be used.
NOTE: Fuses are not included.
• Two pole units are furnished with Plug-in stabs for the two outside bars in duct unless otherwise specified.

Low Impedance Plug-in Cable Tap Boxes

System Box to be Used On	100 Ampere up to 150 A. Lugs for #14 to #0	List Price	200 Ampere up to 250 A. Lugs for #6 to 250 MCM	List Price	400 Ampere Lug Size for 2 #6 to 2 #250 MCM	List Price
3Ø, 3 Wire 2 bars/Ø	LPTB100-2	$110.00	LPTB200-2	$115.00	LPTB400-2	$120.00
3Ø, 4 Wire ½ or FN, 2 bars/Ø	LPTB100-2N	120.00	LPTB200-2N	130.00	LPTB400-2N	135.00
3Ø, 3 Wire 4 bars/Ø	LPTB100-4	125.00	LPTB200-4	132.00	LPTB400-4	137.00
3Ø, 4 Wire ½ N 4 bars/Ø	LPTB100-4N	130.00	LPTB300-4N	135.00	LPTB400-4N	140.00
3Ø, 4 Wire Full Neutral 4 bars/Ø	LPTB100-4FN	135.00	LPTB200-4FN	140.00	LPTB400-4FN	145.00

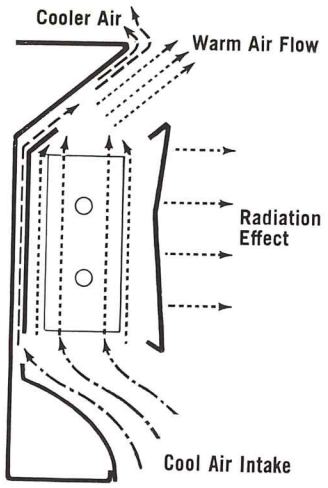
Ground Detector and Neutralizer Plug-In

	Capacity Volts	Catalog Number	List Price
Neutralizer and Ground Detector Plug-in Device	230	LGD-223	$76.00
	460	LGD-443	76.00
	575	LGD-573	76.00

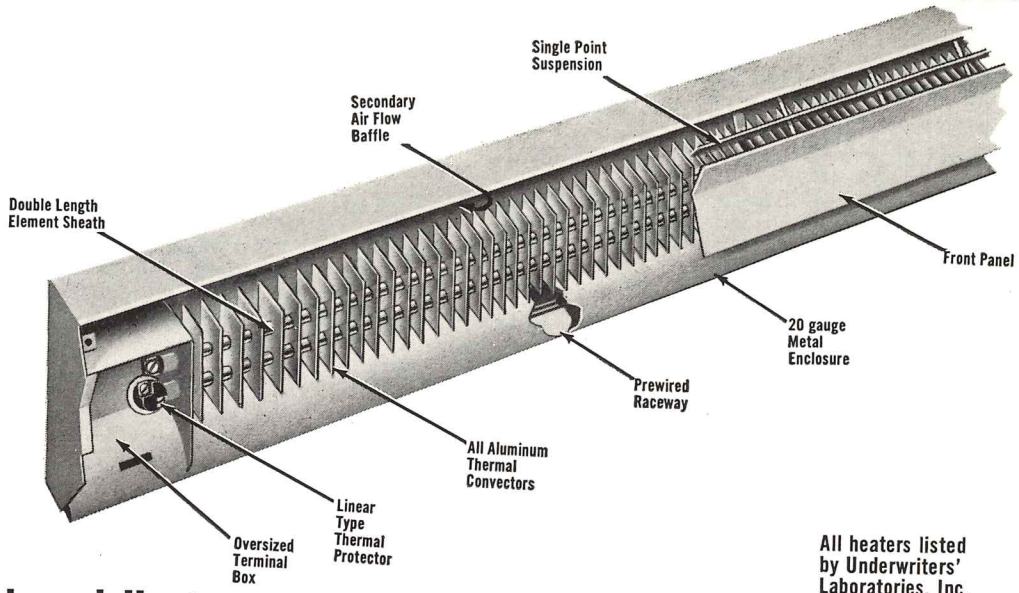
Neutral plug-in stab up to 100 amperes—**$5.00** List.

Combination Plug-in Motor Starters with Breakers

Size 0 ..... **$225.00** List Price
Size 1 ..... **233.00** List Price
Size 2 ..... **315.00** List Price



AIR FLOW DIAGRAM



All heaters listed by Underwriters' Laboratories, Inc.

New Electric Baseboard Heaters

To provide complete system responsibility, Federal Pacific manufactures thermostats and controls as well as comfort heating units.

A versatile electric heating product line requires baseboard in two series of watt densities. Therefore, Federal Pacific manufactures Custom 187—electric baseboard with high comfort, low temperature and De Luxe 250—space-saving, medium intensity baseboard heaters. Both these heaters have the same physical dimensions and can be used interchangeably. Accessories may be used with either baseboard.

Balanced Heat: Federal Pacific Electric Baseboard Heating skilfully combines unique fin construction with an efficient air flow channel to secure balanced distribution of heat by convection and radiation.

Longer Heating Element Life: Heating elements consist of aluminum tubing which is sealed over Nichrome wire. In Federal Pacific Baseboard, parallel heating elements double the length of the element for a given wattage—reducing its operating temperature. In addition, the efficient heat transfer of the Thermal Convector also lowers the element's operating temperature assuring long element life. No exposed live wires.

Thermal Convectors are oversize aluminum fins each of which tightly encircles and is bonded to the parallel heating elements. As a result, temperature differential between heating element and fins is negligible, indicating excellent heat transfer from element to fins to room air.

Maximum, Unrestricted Air Flow: Unobstructed passageways at the bottom and top of the baseboard permit maximum flow of air over the Thermal Convectors and into the room. Front cover easily removed for dusting.

Scientifically Designed Drape Guard prevents accidental contact of drapes or other household furnishings with heating element. This design also improves convection pattern by directing air into room and away from walls.

No Need to Predetermine Floor Covering: After Federal Pacific Baseboard is installed, wall-to-wall carpeting may be laid. Tests show that carpeting may be placed against the baseboard enclosure with no restriction of air flow.

Faster Temperature Response and Recovery: With Federal Pacific Electric Heating, room temperature is practically constant at the thermostat setting. The all-aluminum ,highly conductive Thermal Convector rapidly and efficiently transfers heat from the element to the room area. The demands of the thermostat are quickly met—keeping room temperature at an even, comfortable level.

Dual Air Flow Design: The baffle plate behind the heating unit deflects some of the cool air at the "intake" from the heating element and causes the warmer air to flow away from the wall surface. Walls above the heaters are kept cleaner because they are kept cooler.

Built-in Safety: When air flow is restricted in any way, a linear type thermal limit protector, included in every length of Federal Pacific Electric Baseboard, prevents overheating. Under conditions of partial or complete air flow blockage, the unit still maintains heat by cycling "on" and "off" as necessary. Thus, the maximum allowable heat is produced without exceeding a safe operating temperature.

Attractive, Trim Appearance: Heavy 20 gauge steel is used to form the exterior housing of the trim looking Federal Pacific Electric Baseboards. The clean design of the enclosure is further enhanced by the bonderized Neutra Beige baked enamel finish that blends with any room decor. No exposed screws or clips.

The baseboards may be painted on the job to match any color scheme without additional preparation.

Single-point Suspension of Thermal Convectors: Each heating unit is suspended from the housing at only one point to allow for noiseless expansion and contraction and to eliminate stress on the metal parts. In 72″ and 96″ lengths, two sets of heating elements in tandem reduce stress noise.

QUICK, EASY INSTALLATION

Prewired Raceways for Faster Installation: Wiring is simplified because connection can be made from either end of the baseboard on the 48″, 72″, and 96″ units. There is no need to wire across raceways to join two or more baseboard sections. Mounting holes in back plate are on 8″ centers. To facilitate wiring, three knockouts are conveniently located at both ends.

No Burnout "Callbacks": Heating elements are factory tested, individually, to maintain high manufacturing standards and to protect contractors' profits.

Packaged for Quick Installation: It is not necessary to disassemble the baseboard for installation. Heating element assembly, back plate, and front plate are packaged disassembled in one carton to save costly installation time and protect finish.

Economical Accessory Section: A 6″ section of baseboard, minus the cover, accepts baseboard thermostats, summer-winter transfer switches, as well as standard convenience outlets which may be secured from local distributor.

Warranty: Federal Pacific guarantees the heating elements against defective material and workmanship for the life of the building.

Federal Pacific Electric Heat

FPE

BASEBOARD SECTIONS AND ACCESSORIES, CURV-AIRE CLASSIC HEATERS

CLASS
2610 Specifications for Baseboard: Height 6.5"—Thickness 2.5"

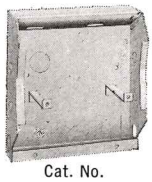
Watts	Length	BTU/Hr. Output	CATALOG NUMBERS* 240 Volt	120 Volt	208 Volt	List Price	Carton Wt., lbs.
De Luxe 250—250 watts per linear foot							
500	24"	1706	BH2405	BH2405-120	BH2405-208	**$20.00**	8
1000	48"	3412	BH4810	BH4810-120	BH4810-208	**30.00**	16
1500	72"	5118	BH7215	BH7215-120	BH7215-208	**40.00**	24
2000	96"	6824	BH9620	—	BH9620-208	**52.00**	32
De Luxe 250—With Integral Thermostat							
500	30"	1706	BHT3005	BHT3005-120	BHT3005-208	**28.00**	10
1000	54"	3412	BHT5410	BHT5410-120	BHT5410-208	**38.00**	18
1500	78"	5118	BHT7815	BHT7815-120	BHT7815-208	**48.00**	26
2000	102"	6824	BHT1020	—	BHT1020-208	**64.00**	34
Custom 187—187½ watts per linear foot							
375	24"	1280	BH2403	BH2403-120	BH2403-208	**20.00**	8
750	48"	2559	BH4807	BH4807-120	BH4807-208	**30.00**	16
1125	72"	3838	BH7211	BH7211-120	BH7211-208	**40.00**	24
1500	96"	5118	BH9615	BH9615-120	BH9615-208	**52.00**	32
Custom 187—With Integral Thermostat							
375	30"	1280	BHT3003	BHT3003-120	BHT3003-208	**28.00**	10
750	54"	2559	BHT5407	BHT5407-120	BHT5407-208	**38.00**	18
1125	78"	3838	BHT7811	BHT7811-120	BHT7811-208	**48.00**	26
1500	102"	5118	BHT1015	BHT1015-120	BHT1015-208	**60.00**	34

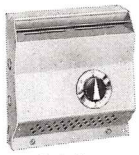
*** Price of 277 volt baseboard 10% above prices shown; 277 volt baseboard with integral thermostat NOT available. Add suffix -277 to Cat. No. when ordering.**

Packaged in individual cartons.

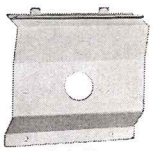
Accessories

Description	Catalog Number	List Price	No. per Carton, Approx. Wt.
Blank Section of Baseboard			
24" length	BHB2400	**$ 8.00**	1 (5 lbs.)
48" length	BHB4800	**12.00**	1 (10 lbs.)
Inside or outside corner section	BH-CS	**5.00**	1 (2 lbs.)
Baseboard mounted thermostat, 22 amp capacity, 55-85°F control range; 2500 watts at 120V and 5000 watts at 240 volts.			
1 Pole	BHT-1	**14.00**	10 per master
2 Pole	BHT-2	**18.00**	carton; 20 lbs.
Convenience Outlet Cover Plates. Used with Cat. No. BH-AS.			
Single	BH-SC	**1.00**	10 (8 lbs.)
Duplex	BH-DC	**1.00**	10 (8 lbs.)
Outlet not included.			
Three-position transfer switch. Used with Cat. No. BH-SC.	BH-TS	**5.00**	10 per master carton (5 lbs.)
Accessory Section for mounting convenience outlet cover plates.	BH-AS	**4.00**	5 (5 lbs.)
Accessory Section Blank Cover. Used with Cat. No. BH-AS.	BH-BC	**1.00**	10 (8 lbs.)
Joining or connecting kit	BH-JK	**1.00**	10 per carton


Cat. No. BH-AS


Cat. No. BHT-2

Cat. No. BH-DC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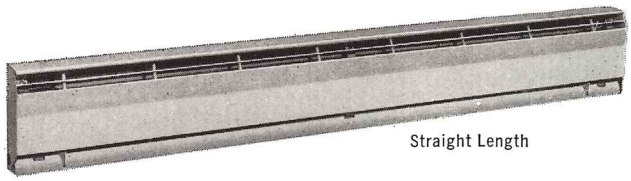
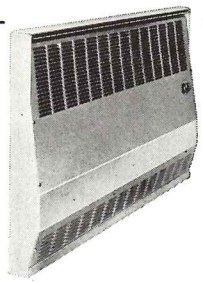

Straight Length

CLASS
2620 Curv-Aire Classic Convector Heaters



Noiseless, wall mounted heaters with space-conserving thinness for architect designed and decorator styled interiors. Excellent for areas such as auditoriums and executive suites where it is essential that there is no operating noise. Curv-Aire Classic Heaters are also selected for installation in restaurants, show rooms, and large homes with limited wall space.

Exclusive Curv-Aire center projection prevents drapes from blocking louvers. Heaters have Hammertone Classic Bronze finish which can be repainted. Listed with Underwriters' Laboratories, Inc.

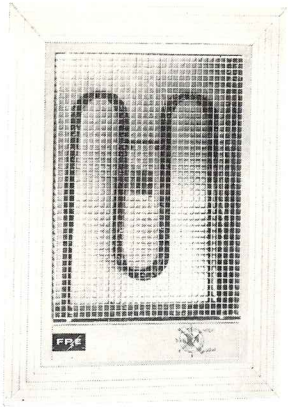
Heating element is guaranteed for 10 years.

Watts	BTU/Hour Output	Volts	Amp	Catalog Number	List Price	DIMENSIONS, INCHES Width	Height	Max. Depth	Approx. Shipping Weight
750	2559	120 208 240	6.3 3.6 3.1	CH2407-120 CH2407-208 CH2407	**$38.00**	24	20	3	21
1000	3412	120 208 240	8.4 4.8 4.2	CH3010-120 CH3010-208 CH3010	**48.00**	30	20	3	26
1500	5118	120 208 240	12.5 7.2 6.2	CH4215-120 CH4215-208 CH4215	**65.00**	42	20	3	36
2000	6824	208 240	9.6 8.4	CH4820-208 CH4820	**70.00**	48	20	3	41
3000	10240	208 240	14.4 12.4	CH6030-208 CH6030	**90.00**	60	20	3	51

Accessories

Description		Catalog Number	List Price
Single pole thermostat kit		CH-T-1P	**$15.00**
Double pole thermostat kit		CH-T-2P	**20.00**
Linear thermal protector kit	State heater Cat. No. to be used with.	CH-TPK	**10.00**

Provisions for easy installation of accessories are provided with Curv-Aire heaters.



Illustrated with Cat. No. BW-FA flush adapter frame

Radiant Wall Heaters

CLASS 2625

Provide comfortable radiant heat in seconds to bath, powder or dressing rooms as well as small play rooms and workshops. Temperature automatically controlled by built-in thermostat.

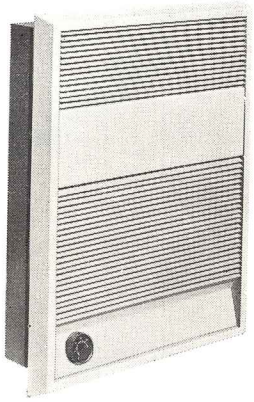
Slim and attractive, these compact, 2-inch deep heaters seem semi-flush in appearance even when surface mounted. The heaters recess easily in 2″-thick, prefab walls. Enclosed element and protective aluminum grille provide complete safety. Listed by Underwriters' Laboratories, Inc.

Enclosure has Neutra Beige enamel finish. Flush trim adapter is brushed aluminum.

Heating element is guaranteed for 5 years.

Watts	BTU/Hour Output	Volts*	Catalog Number	List Price	DIMENSIONS, INCHES Height	Width	Depth	Approx. Weight, lbs.
750	2559	120	BW1207	**$15.60**				
750	2559	240	BW2407	**15.60**				
1000	3412	120	BW1210	**20.00**	14¼	10¼	2	5
1000	3412	240	BW2410	**20.00**	Flush mounting adapter frame adds 13/16″ to width and height.			
Adapter frame for flush mounting, Cat. No. BW-FA				**2.50**				

* 208 volt rating available on special order at same price as 240V. heaters.



Forced Air Wall Heaters

CLASS 2630

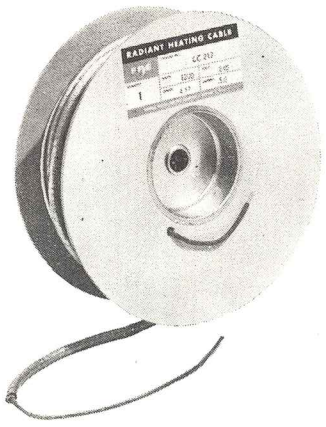
Fan draws cool air from floor, over heating element, and quietly directs a warm stream downward across the floor. Forced air heaters are particularly adaptable for large areas such as stores, offices, long hallways, and lobbies as well as areas with part-time occupancy where high speed warmth recovery is required. Temperature automatically controlled by built-in thermostat. Listed by Underwriters' Laboratories, Inc.

Completely sealed, finned element. Enclosure has Neutra Beige enamel finish. Separate rough-in box facilitates installation. Heaters are designed for flush mounting but can also be easily surface mounted.

Heating element is guaranteed for five years. Size 22⅞″ H, 16⅛″ W, 5¼″ D.

Watts	BTU/Hour Output	Volts*	Catalog Number	List Price	Approx. Wt., lbs.
1500	5118	240	AF2415	**$66.00**	32
2000	6824	240	AF2420	**70.00**	32
3000	10,240	240	AF2430	**80.00**	36
4000	13,652	240	AF2440	**84.00**	36
Surface mounting trim			AF-SA	**6.00**	—

* 208 volt rating available on special order at same price as 240V. heaters.



Radiant Cable

CLASS 2635

Invisible source of heat for homes and apartments. Vinyl insulated and nylon jacketed the cable can be safely embedded in the ceiling of a home as well as in a concrete slab foundation. Has eight foot of preloomed, non-heating lead. Listed by Underwriters' Laboratories, Inc.

Watts	Approx. Length	Catalog Number	List Price	Standard Carton	Weight per Carton
240 Volt Series*					
250	91 ft.	CC202	**$ 5.30**	7	10 lbs.
400	146 ft.	CC204	**5.90**	7	12 lbs.
600	219 ft.	CC206	**6.40**	7	15 lbs.
800	291 ft.	CC208	**7.80**	7	19 lbs.
1000	364 ft.	CC210	**8.80**	7	24 lbs.
1200	437 ft.	CC212	**9.80**	7	26 lbs.
1400	510 ft.	CC214	**10.20**	7	28 lbs.
1600	582 ft.	CC216	**12.00**	7	33 lbs.
1800	655 ft.	CC218	**13.00**	5	28 lbs.
2000	728 ft.	CC220	**13.50**	5	29 lbs.
2250	819 ft.	CC222	**15.00**	5	32 lbs.
2500	910 ft.	CC225	**15.50**	5	32 lbs.
2750	1000 ft.	CC227	**17.00**	5	37 lbs.
3000	1091 ft.	CC230	**18.50**	5	41 lbs.
3300	1200 ft.	CC233	**20.50**	5	47 lbs.
3600	1310 ft.	CC236	**24.50**	4	44 lbs.
4000	1456 ft.	CC240	**28.00**	4	54 lbs.
4400	1600 ft.	CC244	**31.50**	4	69 lbs.
4800	1746 ft.	CC248	**35.50**	2	40 lbs.

* 115 or 208 volt cables are available on special order. Prices available on application.

CLASS

2680 Federal Pacific Thermostats

FPE

WITH BI-METAL THERMAL ELEMENT FOR ACCURATE CONTROL OF ELECTRIC HEATERS

New Federal Pacific Thermostats are wider. They even cover rough-cut outlet box holes. These precision instruments anticipate temperature changes and have provisions for matching the decor of any room.

Exclusive, Changeable Decorator Panel: Clear plastic, flush mounted front cover can be removed to make the thermostat subtly blend with the decor of each room. The underpanel can be painted or wallpaper inserted behind the plastic cover to have the thermostat face exactly match the walls—in minutes.

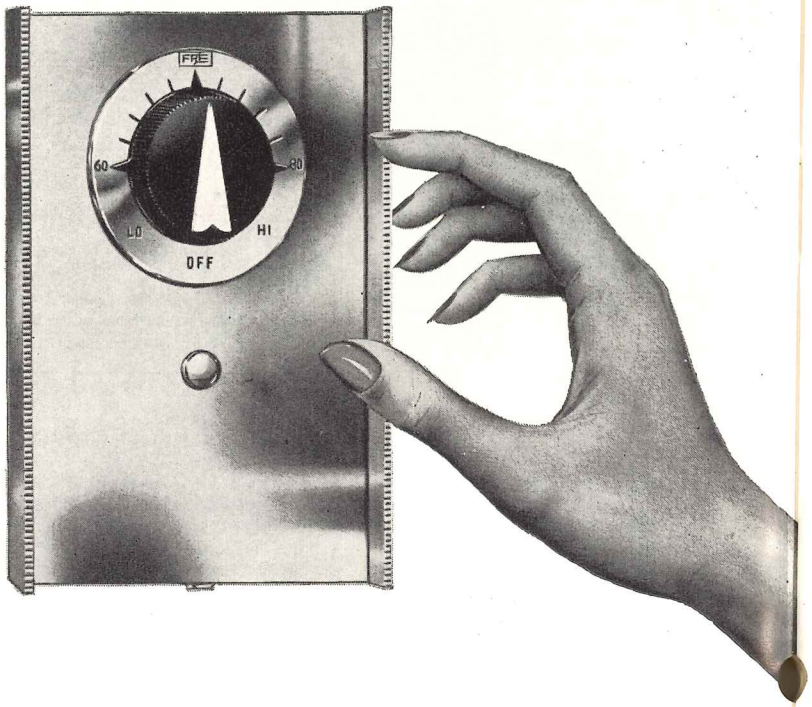
The case of this distinctly styled thermostat comes in a rich bronze-tone finish.

Operates in any Climate, any Altitude without Resetting: Federal Pacific's bi-metal thermal element provides the most precise thermostatic control because of its high sensitivity to temperature changes. Unlike thermostats operated by the expansion and contraction of gas or liquid, Federal Pacific Thermostats utilizing bi-metal are unaffected by altitude or atmospheric pressure. Federal Pacific Thermostats operate perfectly in any climate, at any altitude without any on-the-spot resetting.

Both bi-metal and snap switch are supported by a rigid steel frame, guaranteeing perfect alignment during installation.

Faster Response: A miniature heating coil operating in conjunction with the bi-metal anticipates the changes in room temperature and activates the thermostat quickly on air change insuring ½° differential on single pole and 1° on 2 pole models.

Quiet-acting Snap Switch is held to the most rigid requirements in the industry. Fast "on" - "off" action eliminates arcing and chatter and prevents radio and television interference. The low activating pressure required for positive "on" - "off" action is absolutely uniform in every Federal Pacific Snap Switch. Contact points are fully protected by a dust proof housing.

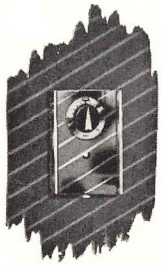


Underwriters' Laboratories, Inc. Approved: All Federal Pacific Thermostats are listed with Underwriters' Laboratories, Inc.

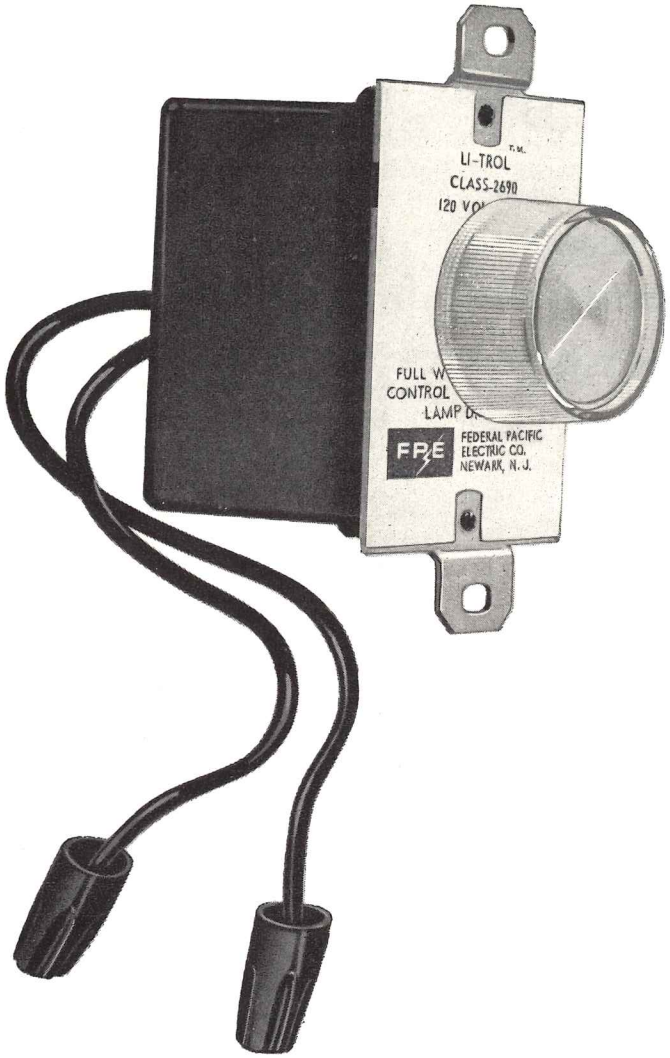
SPECIFICATIONS

Description	Capacity, Amps. 120/240 V. AC	Control Range Degrees F	Temperature Differential at Full Load	WATT CAPACITY 120V	WATT CAPACITY 240V	Catalog Number	List Price	Shipping Weight, lb.*
Single Pole								
Wall Mounted Thermostat	22	55°-85°	½°F	2500	5000	NWT-1	$ 8.50	20 (25 per carton)
Wall Mounted Thermostat with Thermometer	22	55°-85°	½°F	2500	5000	NWT-1T	11.00	
Double Pole								
Wall Mounted Thermostat	22	55°-85°	1°F	2500	5000	NWT-2	$10.50	20 (25 per carton)
Wall Mounted Thermostat with Thermometer	22	55°-85°	1°F	2500	5000	NWT-2T	13.00	

* Individual cartons; 4 per shipping package.



Thermostats with decorator face plates used to match the surrounding wallpaper.



LI/TROL - - - *the dependable dimmer for use on incandescent lighting circuits up to 600 watts, 120 volts a-c.*

LI/TROL, Federal Pacific's electronic light switch, is a static device that controls incandescent lamps from complete "off" to complete "on" smoothly without steps or plateaus. When used up to rated capacity, this unit provides the variation from maximum or minimum light output. The dimmer — fitting into a standard outlet box — can be substituted for an existing single pole light switch.

OUTSTANDING FEATURES OF THE LI/TROL DIMMER ARE:

EASY TO INSTALL: LI/TROL fits within an ordinary wall box and replaces any single pole wall switch. Pre-stripped leads are provided as well as two wire nuts to speed the installation. Unit can be mounted behind any standard or decorative wall plate.

600 WATT RATING: Apply LI/TROL wih confidence on incandescent lamp loads to a full 600 watt capacity.

NOISE FREE: Built-in radio or TV interference filter assures a quietly operating LI/TROL.

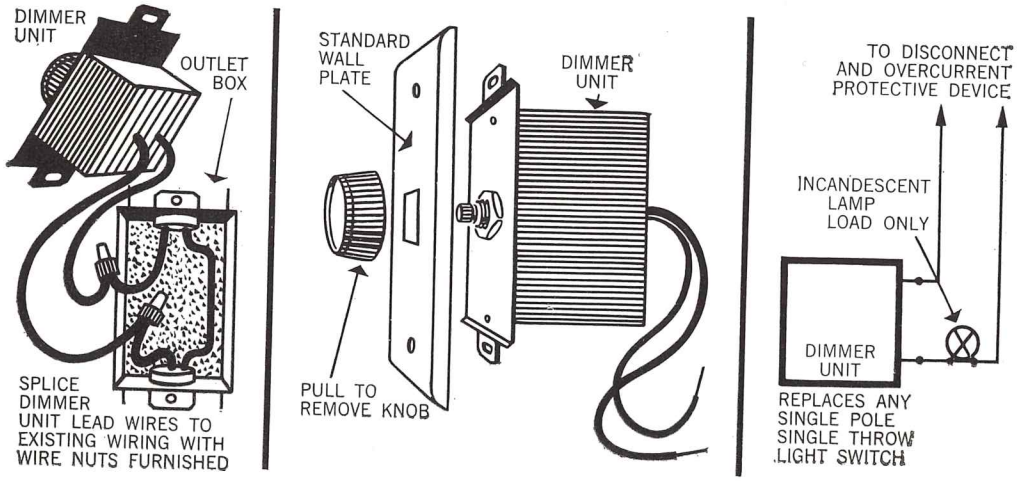
FULL RANGE CONTROL: Amount of lamp brilliance desired is controlled over the full range of LI/TROL's dial travel. No "steps" or bothersome flicker points in the LI/TROL range control.

POSITIVE "OFF" SWITCH: Positive "off" position is incorporated in the range dial and assures no potential in the light circuit, making LI/TROL a **safe** dimming device.

BUILT-IN-DEPENDABILITY: The components used in LI/TROL are fully tested and proved under rigid operating conditions.

LI/TROL DIMMER . . . CAT. NO. 600 . . . LIST PRICE $19.50 EACH

INSTALLATION:

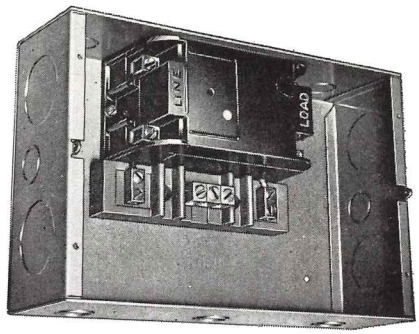

DIMMER UNIT
OUTLET BOX
SPLICE DIMMER UNIT LEAD WIRES TO EXISTING WIRING WITH WIRE NUTS FURNISHED
STANDARD WALL PLATE
DIMMER UNIT
PULL TO REMOVE KNOB
TO DISCONNECT AND OVERCURRENT PROTECTIVE DEVICE
INCANDESCENT LAMP LOAD ONLY
DIMMER UNIT
REPLACES ANY SINGLE POLE SINGLE THROW LIGHT SWITCH

CLASS
2730

"Load Miser" Demand Controls

Load Miser Demand Controls incorporating the "current totalizing" principle (i.e., total current flowing in both live lines of a 3 wire service regardless of balance), act to discriminate between "preferred load" (electric range, total domestic load, etc.) and "less preferred load" (dryers, water heaters, air conditioners, electric heating). When the current drawn by the "preferred load" exceeds a predetermined calibration point, the "less preferred load" is automatically disconnected. When the "preferred load" current falls below the calibration point, the "less preferred load" is automatically reconnected.

- **Saves cost of adding new service entrance capacity when heavy appliances are installed.**
- **Provides inexpensive "Off Peak Water Heating" control device. (Eliminates extra meters and time clocks, etc.)**
- **Reduces demand charges by limiting the demand on industrial and commercial installations.**
- **Permits total electric heating to be installed on existing services as small as 100 amps.**
- **Permits interlocking of electric heating and air conditioning or other appliances.**



Preferred Load Rating (Amp.)	Less Preferred Load Rating (Amp.)	Calibration to Dump Less Preferred Load when Preferred Load Exceeds (Amp.)	Catalog Number	List Price	Enclosure Dimensions (Inches)	Weight per Unit in Carton (Lbs.)
FIXED CALIBRATION						
40	15	10	TLM40/15†	**$48.00**	10¼ x 7½ x 3½	8
60	15	15	TLM60/15†	**53.00**	10¼ x 7½ x 3½	8
100	15	30	TLM100/15†	**56.50**	12 x 8 x 3½	10
40	25	15	TLM40/25*	**56.50**	10¼ x 7½ x 3½	8
60	25	30	TLM60/25*	**60.50**	10¼ x 7½ x 3½	8
100	25	45	TLM100/25*	**72.00**	12 x 8 x 3½	10
40	50	10	TLM40/50*	**75.00**	12 x 10 x 3⅜	12
60	50	15	TLM60/50*	**78.00**	12 x 10 x 3⅜	12
100	50	30	TLM100/50*	**89.00**	12 x 10 x 3⅜	12
DIAL CALIBRATION						
60	25	30 to 45	TLMD60/25	**72.50**	10¼ x 7½ x 3½	8
100	25	45 to 80	TLMD100/25	**84.00**	12 x 8 x 3½	10

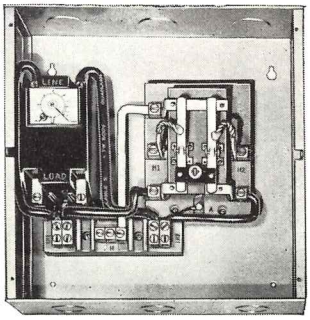
* Available with circuit breaker protection in "less preferred" load circuit, add suffix "B" to catalog number and $19.30 to list price.
† Available with fusible protection in "less preferred" load circuit, add suffix "DF" to catalog number and $11.60 to list price.

CLASS
2750

"Rate Saver" Demand Controls for Electrical Heating Systems

The Rate Saver Demand Control consists of two basic components—a control unit and a relay. The control unit measures the total current of the service entrance or the current of a selected load regardless of condition of balance. When the current exceeds the calibration point of the control unit, the relay dumps the electric heating to half voltage (i.e., quarter power) until the current flow returns below the calibration point.

Each Demand Control has capacity for dumping 100 amps. of electric heating. For larger heating installations the "Custom" Demand Controls are available, to which can be added auxiliary relay units (one auxiliary relay unit for each 100 amps. of additional heating load) up to a maximum of 14 auxiliary relay units per Custom Demand Control or a total of 1400 amps. on low voltage. For industrial and commercial applications, units are available at up to 34.5 KV and 5000 Amps.



RATE SAVER

Service Entrance Rating (Amp.)	Line Voltage (Volts)	Domestic Load Rating (Amp.)	Heating Load Rating (Amp.)	Max. Heating Load per Relay Pole (Amp.)	Dial Calibration Range (Amp.)	Catalog Number	List Price	Enclosure Dimension (Inches)	Weight per Unit in Carton (Lbs.)
100	120/240	70	100	50	30 to 80	LLT100-D†	**$154.00**	14 x 14 x 3¾	20
100*	120/240	70	100	50	15 to 45	LLT101-D†	**163.00**	14 x 14 x 3¾	20
200*	120/240	100A	100	50	30 to 80	LLT102-D†	**167.00**	14 x 14 x 3¾	20

* More if Auxiliary Relay Units added. † Add suffix "F" or "S" For Flush or Surface.

NEW

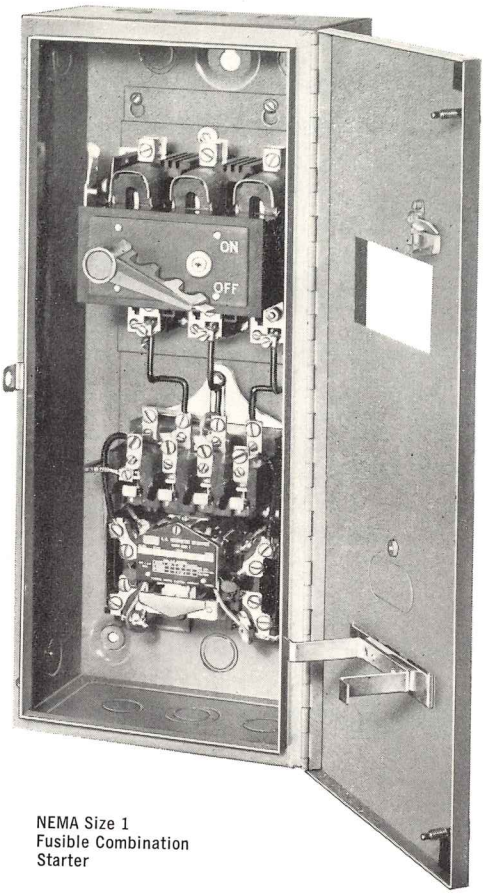
COMPACT COMBINATION MOTOR STARTERS

with Exclusive Safety Features

Both circuit breaker and fusible disconnect Federal Pacific Combination Starters provide unparalleled safety by:

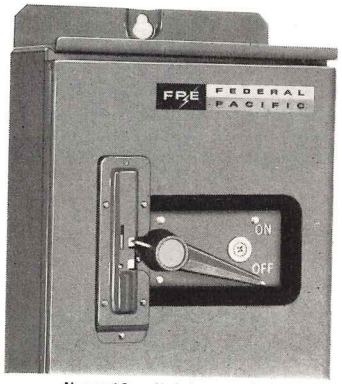
1. **Eliminating troublesome linkage** between cover handle and the disconnect.
2. **Directly locking** the handle of the disconnect with enclosure door "open" or "closed".
3. **28% to 50% Reduction in size.** Size 0, 1, and 2 enclosures can be mounted within the well of a 10 inch "I" beam.
4. **Exclusive** use of rotary handle circuit breakers and Type A-plus fusible disconnects.

FPE 1963 Redi-reference

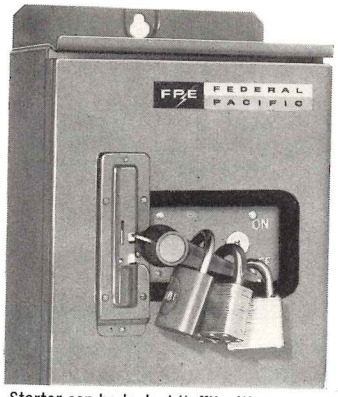


NEMA Size 1
Fusible Combination
Starter

Operating and Locking Features

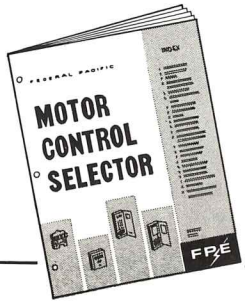


Nema 12 switch is operated through cutout in the door.



Starter can be locked "off" with as many as three padlocks on switch handle.

Rotary handle circuit breaker also can be locked directly on the handle.



MOTOR CONTROL SELECTOR AVAILABLE ON REQUEST.

Following pages on motor control describe the most frequently used control, pushbuttons, and accessories. The complete line of Federal Pacific motor control is listed in the **Motor Control Selector.**

A. C. Manual Starters and Magnetic Contactors

FPE

LINE VOLTAGE TYPE

Line voltage manual starters are used to start, stop, and provide overload protection for small A.C. single or polyphase motors. They are frequently used for the control of fans, blowers, grinders, drill presses and other small machines. When low voltage protection, low voltage release, or control by remotely located push button stations or other pilot devices is required, magnetic starters should be used.

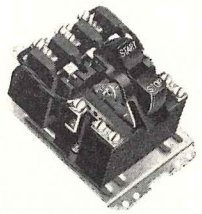
Class 4004 A. C. Manual Starters — Non-Reversing

600 VOLTS MAXIMUM (Size 1½, 300 volt max.) — *** Prices Do Not Include Heater Units**

No. of Poles	NEMA Size	RATINGS Volts	RATINGS Maximum Horsepower Poly-Phase	RATINGS Maximum Horsepower Single Phase	NEMA TYPE 1 General Purpose Enclosure Style	NEMA TYPE 1 Price	NEMA TYPE 4 Watertight Weatherproof Enclosure Style	NEMA TYPE 4 Price	NEMA TYPE 7 & 9 Class I Group D Class II Group E, F, G Hazardous Locations Style	NEMA TYPE 7 & 9 Price	OPEN TYPE No Enclosure Style	OPEN TYPE No Enclosure Price
2	0	115 230	— —	1 1½	AA02	$ 18.50	AD02	$ 50.50	AE02	$ 64.50	AU02	$ 16.50
	1	115 230	— —	1½ 3	AA12	23.50	AD12	62.50	AE12	76.50	AU12	21.50
	1½	115 230	— —	3‡ 5	AAP2	34.50	ADP2	76.50	AEP2	88.50	AUP2	32.50
3	0	110 208-220 440-550	1½ 2 3	1 1½ —	AA03	22.00	AD03	54.00	AE03	68.00	AU03	20.00
	1	110 208-220 440-550	3 5 7½	1½ 3 —	AA13	27.00	AD13	66.00	AE13	80.00	AU13	25.00
4	0	110 208-220 440-550	1½ 2 3	— — —	AA04	32.00	AD04	69.00	AE04	83.00	AU04	30.00
	1	110 208-220 440-550	3 5 7½	— — —	AA14	39.00	AD14	87.00	AE14	101.00	AU14	37.00

* For prices including heater units: ADD $1.50 to 2 pole starter prices. ADD $3.00 to 3 and 4 pole starter prices.

‡ Subject to motor nameplate full load current not exceeding 30 amperes. Style F35.5 heater unit is maximum size available for this starter.



Class 4004
OPEN Type

Class 4004
NEMA Type 1

Class 4102 A. C. Magnetic Contactors — Non-Reversing

Class 4102 magnetic contactors are switching devices used to open and close A.C. power circuits by means of push buttons, limit switches, or other pilot devices. Low voltage protection is obtained by the use of three wire control circuits and momentary contact pilot devices. The electrical interlock necessary for three wire control circuits is furnished as standard on all Class 4102 contactors. Low voltage release is obtained by the use of two wire control circuits and maintained contact pilot devices.

600 VOLTS MAXIMUM 25-60 CYCLES — **With Electrical Interlock for 3-Wire Control**

No. of Poles	NEMA Size	RATINGS Volts	RATINGS Maximum Horsepower Poly-Phase	RATINGS Maximum Horsepower Single Phase	RATINGS Maximum Amperes Open	RATINGS Maximum Amperes Encl	RATINGS Maximum Amperes Tung	NEMA TYPE 1 General Purpose Enclosure Style	NEMA TYPE 1 Price	NEMA TYPE 4 Watertight Weatherproof Enclosure Style	NEMA TYPE 4 Price	NEMA TYPE 7 Class 1 Group D Hazardous Location Style	NEMA TYPE 7 Price	OPEN TYPE No Enclosure Style	OPEN TYPE No Enclosure Price
2 Poles	0	115 230	— —	1 2	20	18	10	AA02	$ 28.00	AD02	$ 63.00	Use Size 1		AU02	$ 26.00
	1	115 230	— —	2 3	30	27	15	AA12	33.00	AD12	69.00	AE12	$135.00	AU12	31.00
	2	115 230	— —	3 7½	50	45	30	AA22	68.00	AD22	140.00	AE22	246.00	AU22	58.00
	3	115 230	— —	7½ 15	100	90	60	BA32	112.00	BD32	214.00	—	—	BU32	92.00
	4	— —	— —	— —	150	135	120	BA42	264.00	BD42	438.00	—	—	BU42	222.00
	5	— —	— —	— —	300	270	240	AA52	558.00	AD52	778.00	—	—	AU52	481.00
	6	— —	— —	— —	600	540	480	AA62	1461.00	AD62	2105.00	—	—	AU62	1144.00
3 Poles	00	110 208-220 440-550	¾ 1½ 2	⅓ 1 —	10	9	5	AA003	25.00	—	—	—	—	AU003	23.00
	0	208-220 440-550	3 5	— —	20	18	10	AA03	31.00	AD03	66.00	Use Size 1		AU03	29.00
	1	208-220 440-550	7½ 10	— —	30	27	15	AA13	36.00	AD13	72.00	AE13	138.00	AU13	34.00
	2	208-220 440-550	15 25	— —	50	45	30	AA23	72.00	AD23	144.00	AE23	222.00	AU23	62.00
	3	208-220 440-550	30 50	— —	100	90	60	BA33	120.00	BD33	222.00	—	—	BU33	100.00
	4	208-220 440-550	50 100	— —	150	135	120	BA43	282.00	BD43	456.00	—	—	BU43	240.00
	5	208-220 440-550	100 200	— —	300	270	240	AA53	600.00	AD53	820.00	—	—	AU53	523.00

Class 4102
NEMA Type 1

Class 4102
NEMA Type 4

ORDERING INSTRUCTIONS:
1. Order by Class and Style number. 2. Specify coil voltage and frequency. 3. If modifications and special features are required, refer to table on page 96.

A. C. Magnetic Non-Reversing Starters

LINE VOLTAGE TYPE

Class 4204 line voltage magnetic starters are used to start, stop and provide overload protection for A.C. single or polyphase motors. Low voltage protection is obtained by using three wire control circuits and momentary contact pilot devices. Low voltage release is obtained by using two wire control circuits and maintained contact pilot devices. Motor overload protection is provided by bimetallic overload relays which can be easily adjusted for either manual or automatic reset. When full voltage starting will result in torques or inrush currents too high for the intended application, reduced voltage starters should be used.

600 VOLT MAXIMUM 25-60 CYCLES — *** Prices Do Not Include Heater Units**

No. of Poles	NEMA Size	RATINGS Volts	RATINGS Maximum Horsepower Poly-Phase	RATINGS Maximum Horsepower Single Phase	RATINGS Maximum Amperes Open	RATINGS Maximum Amperes Encl.	NEMA TYPE 1 General Purpose Enclosure Style	NEMA TYPE 1 Price	NEMA TYPE 4 Watertight Weatherproof Enclosure Style	NEMA TYPE 4 Price	NEMA TYPE 7 Class I Group D Hazardous Locations Style	NEMA TYPE 7 Price	FLUSH TYPE General Purpose Enclosure Style	FLUSH TYPE Price	OPEN TYPE No Enclosure Style	OPEN TYPE Price
2‡ Poles	0	115 230	— —	1 2	20	18	AA02	$ 32.50	AD02	$ 67.50	Use Size 1		AF02	$ 38.50	AU02	$ 30.50
	1	115 230	— —	2 3	30	27	AA12	37.50	AD12	73.50	AE12	$139.50	AF12	43.50	AU12	35.50
	1½	115 230	— —	3† 5	— —	— —	AAP2	48.50	ADP2	84.50	AEP2	150.50	AFP2	55.50	AUP2	46.50
3 Poles	00	110 208-220 440-550	¾ 1½ 2	⅓ 1 —	10	9	AA003	29.00	—	—	—	—	—	—	AU003	27.00
	0	110 208-220 440-550	2 3 5	— — —	20	18	AA03	36.00	AD03	71.00	Use Size 1		AF03	43.00	AU03	34.00
	1	110 208-220 440-550	3 7½ 10	— — —	30	27	AA13	41.00	AD13	77.00	AE13	143.00	AF13	48.00	AU13	39.00
	2	110 208-220 440-550	7½ 15 25	— — —	50	45	AA23	81.00	AD23	153.00	AE23	231.00	AF23	91.00	AU23	71.00
	3	110 208-220 440-550	15 30 50	— — —	100	90	BA33	135.00	BD33	237.00	—	—	BF33	149.00	BU33	115.00
	4	208-220 440-550	50 100	— —	150	135	BA43	305.00	BD43	479.00	—	—	—	—	BU43	263.00
	5	208-220 440-550	100 200	— —	300	270	AA53	681.00	AD53	901.00	—	—	—	—	AU53	604.00
	6	208-220 440-550	200 400	— —	600	540	AA63	2014.00	—	—	—	—	—	—	AU63	1634.00

* Prices Including Heater Units:
ADD $1.50 to 2 Pole Starter Prices. (1 Heater Required at $1.50).
ADD $3.00 to 3 Pole Starter Prices. (2 Heaters Required at $1.50 Each).

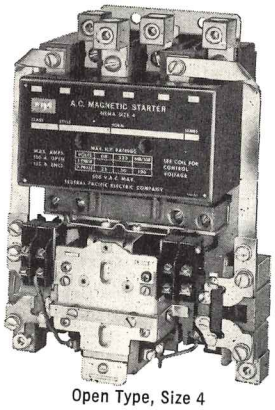
† Subject to motor nameplate full load current not exceeding 30 amperes. Style F35.5 heater unit is maximum size available for this starter.

‡ Dual voltage coils with changeable links for 115 or 230 volts are supplied as standard on 2 pole starters.

ORDERING INSTRUCTIONS

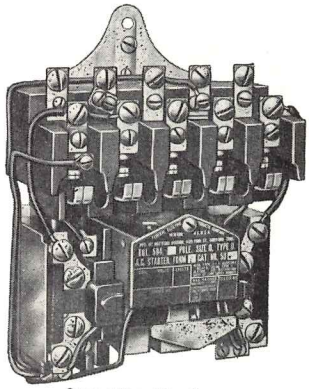
1. Order by Class and Style number.
2. Specify coil voltage and frequency.
3. Order heaters from selection chart on page 100.
4. If modification and special features are required, refer to table on page 96, select the correct Form letters, and order as "Class 4204 Style .... Form ....". Clearly describe modifications not covered by Form letters.

Type AA13 Form A



Open Type, Size 4

NEMA Type 4 Enclosure


Open Type, Size 0

CLASS

4214 A. C. Magnetic Non-Reversing Combination Starters

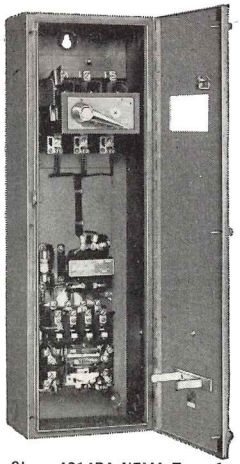
FPE

LINE VOLTAGE TYPE WITH DISCONNECT SWITCH

Class 4214 switch type combination magnetic starters consist of a fusible or non-fusible disconnect switch and a Class 4204 non-reversing magnetic starter mounted in a common enclosure.

600 VOLTS MAXIMUM 25-60 CYCLES — ***Prices Do Not Include Heater Units**

RATINGS		NEMA Size	FUSE CLIP Size Amps★	NEMA TYPE 1 General Purpose Enclosure		SEMI DUST-TIGHT General Purpose Enclosure		NEMA TYPE 4 Watertight Weatherproof Enclosure		NEMA TYPE 12 Dust Tight Industrial Use Enclosure ●	
Volts	MAX. H.P. Polyphase†			Style	Price	Style	Price	Style	Price	Style	Price
208-220	3	0	None	BA0300	$ 91.00	BB0300	$101.00	AD0300	$187.00	BK0300	$115.00
		0	30	BA0321	94.00	BB0321	104.00	AD0321	190.00	BK0321	118.00
	5	1	None	BA1300	96.00	BB1300	106.00	AD1300	192.00	BK1300	120.00
		1	⊙ 30	BA1321	99.00	BB1321	109.00	AD1321	195.00	BK1321	123.00
		1	60	BA1322	101.00	BB1322	111.00	AD1322	197.00	BK1322	125.00
	7½	1	None	BA1300	96.00	BB1300	106.00	AD1300	192.00	BK1300	120.00
		1	⊙ 30	BA1321	99.00	BB1321	109.00	AD1321	195.00	BK1321	123.00
		1	60	BA1322	101.00	BB1322	111.00	AD1322	197.00	BK1322	125.00
	10	2	None	BA2300	152.00	BB2300	168.00	AD2300	300.00	BK2300	186.00
		2	⊙ 60	BA2322	156.00	BB2322	172.00	AD2322	304.00	BK2322	190.00
		2	100	BA2323	168.00	BB2323	184.00	AD2323	316.00	BK2323	202.00
	15	2	None	BA2300	152.00	BB2300	168.00	AD2300	300.00	BK2300	186.00
		2	⊙ 60	BA2322	156.00	BB2322	172.00	AD2322	304.00	BK2322	190.00
		2	‡ 100	BA2323	168.00	BB2323	184.00	AD2323	316.00	BK2323	202.00
	25	3	None	BA3300	257.00	BB3300	279.00	AD3300	515.00	BK3300	301.00
		3	200	BA3324	285.00	BB3324	307.00	AD3324	543.00	BK3324	329.00
	30	3	None	BA3300	257.00	BB3300	279.00	AD3300	515.00	BK3300	301.00
		3	‡ 200	BA3324	285.00	BB3324	307.00	AD3324	543.00	BK3324	329.00
	50	4	None	BA4300	488.00	BB4300	526.00	—	—	BK4300	610.00
		4	400	BA4325	554.00	BB4325	592.00	—	—	BK4325	676.00
440-550	3	0	None	BA0300	91.00	BB0300	101.00	AD0300	187.00	BK0300	115.00
		0	30	BA0361	96.00	BB0361	106.00	AD0361	192.00	BK0361	120.00
	5	0	None	BA0300	91.00	BB0300	101.00	AD0300	187.00	BK0300	115.00
		0	30	BA0361	96.00	BB0361	106.00	AD0361	192.00	BK0361	120.00
	7½	1	None	BA1300	96.00	BB1300	106.00	AD1300	192.00	BK1300	120.00
		1	30	BA1361	101.00	BB1361	111.00	AD1361	197.00	BK1361	125.00
	10	1	None	BA1300	96.00	BB1300	106.00	AD1300	192.00	BK1300	120.00
		1	⊙ 30	BA1361	101.00	BB1361	111.00	AD1361	197.00	BK1361	125.00
		1	60	BA1362	103.00	BB1362	113.00	AD1362	199.00	BK1362	127.00
	15	2	None	BA2300	152.00	BB2300	168.00	AD2300	300.00	BK2300	186.00
		2	60	BA2362	159.00	BB2362	175.00	AD2362	307.00	BK2362	193.00
	25	2	None	BA2300	152.00	BB2300	168.00	AD2300	300.00	BK2300	186.00
		2	⊙ 60	BA2362	159.00	BB2362	175.00	AD2362	307.00	BK2362	193.00
		2	100	BA2363	170.00	BB2363	186.00	AD2363	318.00	BK2363	204.00
	30	3	None	BA3300	257.00	BB3300	279.00	AD3300	515.00	BK3300	301.00
		3	‡ 100	BA3363	268.00	BB3363	290.00	AD3363	526.00	BK3363	312.00
		3	200	BA3364	289.00	BB3364	311.00	—	—	BK3364	333.00
	50	3	None	BA3300	257.00	BB3300	279.00	AD3300	515.00	BK3300	301.00
		3	‡ 100	BA3363	268.00	BB3363	290.00	AD3363	526.00	BK3363	312.00
		3	200	BA3364	289.00	BB3364	311.00	—	—	BK3364	333.00
	75	4	None	BA4300	488.00	BB4300	526.00	—	—	BK4300	610.00
		4	⊙ 200	BA4364	509.00	BB4364	547.00	—	—	BK4364	631.00
		4	400	BA4365	562.00	BB4365	600.00	—	—	BK4365	684.00
	100	4	None	BA4300	488.00	BB4300	526.00	—	—	BK4300	610.00
		4	⊙ 200	BA4364	509.00	BB4364	547.00	—	—	BK4364	631.00
		4	400	BA4365	562.00	BB4365	600.00	—	—	BK4365	684.00



Class 4214BA NEMA Type 1

* For prices including heater units: ADD $3.00 to 3 and 4 pole starter prices. (2 heaters required at $1.50 each).

† In addition to the motor horsepower not exceeding the maximum value shown for a particular starter, it is also important that the motor full load current not exceed the maximum value shown for the same size Class 4102 contactor.

‡ These ratings are for starting duty only. Fuses are not large enough for long time acceleration.

★ Prices do not include fuses. Fuses should be selected on the basis of actual motor current ratings in accordance with Section 430-6 of the National Electrical Code (1962 edition).

⊙ When time delay fuses suitable for the starting characteristics of the motor are used, the horsepower ratings shown in the table may be applied to the starters listed in accordance with Section 430-90 of the National Electrical Code (1962 edition).

● Prices do not include control transformers. Standard NEMA 12 enclosures do not have external reset buttons for the overload relays.

ORDERING INSTRUCTIONS

1. Order by Class and Style number.
2. Specify coil voltage and frequency.
3. Order heaters from selection chart on page 100.
4. If modification and special features are required, refer to table on page 96, select the correct Form letters and order as "Class 4214, Style - - - Form - - -". Clearly describe modifications not covered by Form letters.

NEMA Starter Size	Fuse Clip Amps.	Max. Volts	Max. H.P. Poly-phase
1	30	250 600	7½ 10
2	60	250 600	15 25
3	100	600	50
4	200	600	100

A. C. Magnetic Non-Reversing Combination Starters

LINE VOLTAGE TYPE WITH CIRCUIT BREAKER

Class 4215 circuit breaker type combination magnetic starters consist of an AB circuit breaker and a Class 4204 non-reversing magnetic starter mounted in a common enclosure.

600 VOLTS MAXIMUM 25-60 CYCLES — **3 POLE** — ***Prices Do Not Include Heater Units**

RATINGS		NEMA Size	Circuit Breaker Frame	Circuit Breaker Trip Amps	NEMA TYPE 1 General Purpose Enclosure		NEMA TYPE 4 Watertight Weatherproof Enclosure		NEMA TYPE 7 Class 1, Group D Hazardous Locations		NEMA TYPE 12 Dust-tight Industrial Use Enclosure ●	
Volts	Max. H.P. Poly-phase†				Style	Price	Style	Price	Style	Price	Style	Price
208-220	2	0	NEF	15	BA03201	$ 98.00	AD03201	$ 194.00	AE03201	$ 221.00	BK03201	$ 122.00
	3	0	NEF	20	BA03202	98.00	AD03202	194.00	AE03202	221.00	BK03202	122.00
	5	1	NEF	40	BA13204	103.00	AD13204	199.00	AE13204	225.00	BK13204	127.00
	7½	1	NEF	70	BA13207	103.00	AD13207	199.00	AE13207	225.00	BK13207	127.00
	10	2	NEF	70	BA23207	158.00	AD23207	306.00	AE23207	309.00	BK23207	192.00
	15	2	NEF	100	BA23210	158.00	AD23210	306.00	AE23210	309.00	BK23210	192.00
	20	3	NFJ	100	BA33210	272.00	AD33210	530.00	AE33210	554.00	BK33210	316.00
	25	3	NFJ	100	BA33210	272.00	AD33210	530.00	AE33210	554.00	BK33210	316.00
	30	3	NFJ	125	BA33212	272.00	AD33212	530.00	AE33212	554.00	BK33212	316.00
	40	4	NJL	150	BA43215	597.00	AD43215	927.00	AE43215	863.00	BK43215	719.00
	50	4	NJL	175	BA43217	597.00	AD43217	927.00	AE43217	863.00	BK43217	719.00
	60	5	NJL	225	BA53222	1346.00	AD53222	2188.00	—	—	BK53222	1642.00
	75	5	NJL	300	BA53230	1346.00	AD53230	2188.00	—	—	BK53230	1642.00
	100	5	NJL	400	BA53240	1346.00	AD53240	2188.00	—	—	BK53240	1642.00
440	5	0	NEF	15	BA03401	127.00	AD03401	223.00	AE03401	245.00	BK03401	151.00
	7½	1	NEF	20	BA13402	132.00	AD13402	228.00	AE13402	251.00	BK13402	156.00
	10	1	NEF	40	BA13404	132.00	AD13404	228.00	AE13404	251.00	BK13404	156.00
	15	2	NEF	50	BA23405	187.00	AD23405	335.00	AE23405	335.00	BK23405	221.00
	20	2	NEF	70	BA23407	187.00	AD23407	335.00	AE23407	335.00	BK23407	221.00
	25	2	NEF	70	BA23407	187.00	AD23407	335.00	AE23407	335.00	BK23407	221.00
	30	3	NFJ	70	BA33407	272.00	AD33407	530.00	AE33407	554.00	BK33407	316.00
	40	3	NFJ	90	BA33409	272.00	AD33409	530.00	AE33409	554.00	BK33409	316.00
	50	3	NFJ	90	BA33409	272.00	AD33409	530.00	AE33409	554.00	BK33409	316.00
	60	4	NJL	100	BA43410	597.00	AD43410	927.00	AE43410	863.00	BK43410	719.00
	75	4	NJL	125	BA43412	597.00	AD43412	927.00	AE43412	863.00	BK43412	719.00
	100	4	NJL	175	BA43417	597.00	AD43417	927.00	AE43417	863.00	BK43417	719.00
	125	5	NJL	250	BA53425	1346.00	AD53425	2188.00	—	—	BK53425	1642.00
	150	5	NJL	300	BA53430	1346.00	AD53430	2188.00	—	—	BK53430	1642.00
	200	5	NJL	400	BA53440	1346.00	AD53440	2188.00	—	—	BK53440	1642.00
550	5	0	NF	15	BA03601	127.00	AD03601	223.00	AE03601	245.00	BK03601	151.00
	7½	1	NF	20	BA13602	132.00	AD13602	228.00	AE13602	251.00	BK13602	156.00
	10	1	NF	20	BA13602	132.00	AD13602	228.00	AE13602	251.00	BK13602	156.00
	15	2	NF	30	BA23603	187.00	AD23603	335.00	AE23603	335.00	BK23603	221.00
	20	2	NF	40	BA23604	187.00	AD23604	335.00	AE23604	335.00	BK23604	221.00
	25	2	NF	50	BA23605	187.00	AD23605	335.00	AE23605	335.00	BK23605	221.00
	30	3	NFJ	70	BA33607	272.00	AD33607	530.00	AE33607	554.00	BK33607	316.00
	40	3	NFJ	70	BA33607	272.00	AD33607	530.00	AE33607	554.00	BK33607	316.00
	50	3	NFJ	70	BA33607	272.00	AD33607	530.00	AE33607	554.00	BK33607	316.00
	60	4	NJL	90	BA43609	597.00	AD43609	927.00	AE43609	863.00	BK43609	719.00
	75	4	NJL	100	BA43610	597.00	AD43610	927.00	AE43610	863.00	BK43610	719.00
	100	4	NJL	125	BA43612	597.00	AD43612	927.00	AE43612	863.00	BK43612	719.00
	125	5	NJL	200	BA53620	1346.00	AD53620	2188.00	—	—	BK53620	1642.00
	150	5	NJL	225	BA53622	1346.00	AD53622	2188.00	—	—	BK53622	1642.00
	200	5	NJL	300	BA53630	1346.00	AD53630	2188.00	—	—	BK53630	1642.00

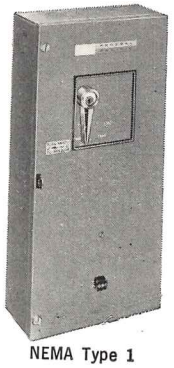
* For prices including heater units: ADD $3.00 to starter prices. (2 heaters required at $1.50 each.)

† In addition to the motor horsepower not exceeding the maximum value shown for a particular starter, it is also important that the motor full load current not exceed the maximum value shown for the same size Class 4102 contactor.

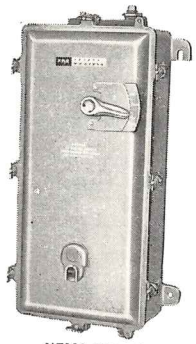
● Prices do not include control transformers. Standard NEMA 12 enclosures do not have external reset buttons for the overload relays.

ORDERING INSTRUCTIONS

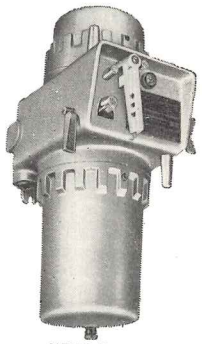
1. Order by Class and Style number.
2. Specify coil voltage and frequency.
3. Order heaters from selection chart on page 100.
4. If modifications and special features are required, refer to table on page 96, select the correct Form letters, and order as "Class 4215, Style .... Form .... ". Clearly describe modifications not covered by Form letters.



NEMA Type 1



NEMA Type 4



NEMA Type 7

CLASS

4224 A. C. Magnetic Reversing Starters

FPE

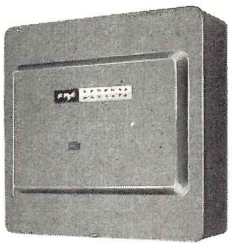
LINE VOLTAGE TYPE

Reversing magnetic starters are used to start, stop, reverse, and provide overload protection for A.C. single or poly-phase motors. Mechanical and electrical interlocking are provided to prevent accidental closing of both contactors simultaneously. Low voltage protection is obtained by using three wire control circuits and momentary contact pilot devices. Low voltage release is obtained by using two wire control circuits and maintained contact pilot devices.

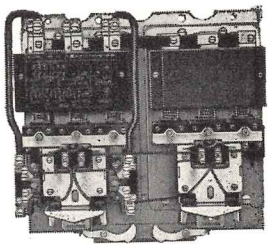
600 VOLTS MAXIMUM 25-60 CYCLES — ***Prices Do Not Include Heater Units**

No. of Poles	NEMA Size	RATINGS Volts	RATINGS MAX. H.P.†	Motor Type	NEMA TYPE 1 General Purpose Enclosure Style	NEMA TYPE 1 Price	NEMA TYPE 4 Watertight Weatherproof Enclosure Style	NEMA TYPE 4 Price	OPEN TYPE No Enclosure Style	OPEN TYPE Price
3	00	110 208-220 440-550	¾ 1 1	3 Wire 3 Phase	BA003	$ 69.00	BD003	$115.00	BU003	$ 65.00
	0	110 208-220 440-550	2 3 5		AA03	81.00	AD03	127.00	AU03	77.00
	1	110 208-220 440-550	3 7½ 10		AA13	93.00	AD13	157.00	AU13	87.00
	2	110 208-220 440-550	7½ 15 25		AA23	181.00	AD23	285.00	AU23	165.00
	3	110 208-220 440-550	15 30 50		BA33	302.00	BD33	456.00	BU33	274.00
	4	208-220 440-550	50 100		BA43	721.00	BD43	993.00	BU43	669.00
	5	208-220 440-550	100 200		AA53	1548.00	AD53	1900.00	AU53	1247.00

* For prices including heater units: ADD $3.00 (2 heaters required at $1.50 each).



NEMA Type 1



Open Type

ORDERING INSTRUCTIONS:

1. Order by Class and Style number.
2. Specify coil voltage and frequency.
3. Order heaters from selection chart on page 100.
4. If modification and special features are required, refer to table below:

Classes 4102, 4204, 4214, 4215, 4224 (Reversing) Modifications, Special Features: Contactors, Starters

Description	Form Letter	LIST PRICE ADDITION Size 00-0-1-1½	Size 2	Size 3	Size 4	Size 5	Size 6
"Start-Stop" Push Button in Cover							
NEMA Type 1, Semi Dust-tight Enclosures and Flush (to size 3 only)	A †	$ 8.00	$ 8.00	$ 8.00	$ 8.00	$ 33.00	$ 33.00
NEMA Type 4 and 12 Enclosures	A	22.00	22.00	22.00	22.00	50.00	—
NEMA Type 7 Enclosure	A	33.00	33.00	—	—	—	—
"Forward-Reverse-Stop" Push Button in Cover—Reversing Starters Only							
NEMA Type 1 and Semi Dust-tight Enclosures	A1 †	40.00	40.00	40.00	40.00	57.00	—
NEMA Type 4 and 12 Enclosures	A1	50.00	50.00	50.00	50.00	67.00	—
"Hand-Off-Auto" Selector Switch in Cover							
NEMA Type 1, Semi Dust-tight Enclosures and Flush (to size 3 only)	B †	8.00	8.00	8.00	8.00	33.00	33.00
NEMA Type 4 and 12 Enclosures	B	22.00	22.00	22.00	22.00	50.00	—
Pilot Light in Cover, Each (NEMA Type 1, 12, Flush and Semi Dust-tight only). Specify voltage, frequency, and color of lens. (Red is standard.)							
Unwired	P	15.00	15.00	15.00	15.00	15.00	15.00
Wired	P	27.00	27.00	27.00	27.00	27.00	27.00
Electrical Interlocks—Non-Reversing Starters Only							
One extra Normally Open	C10	11.00	11.00	11.00	11.00	33.00	33.00
One extra Normally Closed	C01	11.00	11.00	11.00	11.00	33.00	33.00
For other combinations, specify number of extra Normally Open and Normally Closed interlocks required. Price per each interlock	C _ _	11.00	11.00	11.00	11.00	33.00	33.00
Electrical Interlocks—Reversing Starters Only							
One extra Normally Open on each contactor	C1010	22.00	22.00	22.00	22.00	66.00	—
One extra Normally Closed on each contactor	C0101	22.00	22.00	22.00	22.00	66.00	—
For other combinations, specify number of extra Normally Open and Normally Closed interlocks and contactors on which required. Price per each interlock	C _ _ _ _	11.00	11.00	11.00	11.00	33.00	—
Change standard Normally Open holding circuit interlock to Normally Closed	D	11.00	11.00	11.00	11.00	11.00	—
Both contactors (Class 4224)	D	22.00	22.00	22.00	22.00	—	—
Forward contactor only (D1); Reverse contactor only (D2)	D1 or D2	11.00	11.00	11.00	11.00	—	—
Separate Control Circuit (Specify voltage and frequency)	S †	NC	NC	NC	NC	NC	NC
Dual Voltage Coil 110/220 or 220/440 volt (Class 4224 requires 2)	M3	2.00	2.00	2.00	—	—	—
Control Circuit Transformer (NEMA Types 1, 4, 12 and Semi Dust-tight only). Specify primary voltage.							
50-60 cycle, 110 volt fused secondary	FT	27.00	38.00	56.00	68.00	77.00	—
50-60 cycle, 110 volt fused secondary, 100 watts extra capacity	FT1	48.00	62.00	78.00	88.00	98.00	—
Additional Overload Relay (Less Heater*)	E	4.50	8.50	23.50	38.50	68.50	68.50
Engraved Bakelite Nameplate on Cover (NEMA Types 1, 4, 12, Flush, Semi Dust-tight).	N †	5.00	5.00	5.00	5.00	5.00	5.00

† Modifications marked (†) are available on size 00.

Standard Duty Push Button Stations

Class 4801 standard duty push button stations are used for the remote control of all types of magnetic starters. Momentary contact push buttons and pilot lights are available in a variety of arrangements and enclosures suitable for most general purpose applications. These push button stations are suitable for either vertical or horizontal mounting since the markings are molded into the surface of the push button operators which can easily be rotated in 90° steps. Double break contacts and design simplicity result in long trouble-free life.

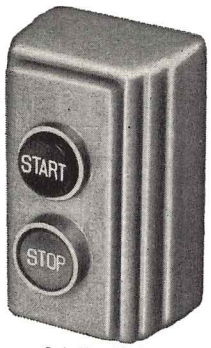
600 VOLTS A.C. OR D.C. MAXIMUM

No. of Units	Marking	Features	Sym-bol	NEMA TYPE 1 General Purpose Enclosure		NEMA TYPE 4 Water-Tight Enclosure		NEMA TYPE 7 Hazardous Locations		FLUSH TYPE No Pull Box		OPEN TYPE* No Enclosure	
				Style	Price	Style	Price	Style	Price	Style	Price	Style	Price
1	★Start		1	ASA1-1	$ 6.00	ASD1-1	$19.00	ASE1-1	$23.00	ASY1-1	$ 7.50	ASU1-1	$ 4.00
	Stop		2	ASA1-2	6.00	ASD1-2	19.00	ASE1-2	23.00	ASY1-2	7.50	ASU1-2	4.00
	Stop	Lockout	2	ASA1-3	9.00	ASD1-3	22.00	ASE1-3	26.00	—	—	—	—
2	★Start-Stop	Lockout on stop	3	ASA2-1	6.00	ASD2-1	19.00	ASE2-1	23.00	ASY2-1	7.50	ASU2-1	4.00
	★Start-Stop		3	ASA2-2	9.00	ASD2-2	22.00	ASE2-2	26.00	ASY2-2	10.50	—	—
	★For.-Rev.		4	ASA2-3	7.50	ASD2-3	19.00	ASE2-3	23.00	ASY2-3	9.00	ASU2-3	5.50
	★Raise-Lower		4	ASA2-4	7.50	ASD2-4	19.00	ASE2-4	23.00	ASY2-4	9.00	ASU2-4	5.50
	★Up-Down		4	ASA2-5	7.50	ASD2-5	19.00	ASE2-5	23.00	ASY2-5	9.00	ASU2-5	5.50
	★Open-Close		4	ASA2-6	7.50	ASD2-6	19.00	ASE2-6	23.00	ASY2-6	9.00	ASU2-6	5.50
	★Fast-Slow		4	ASA2-7	7.50	ASD2-7	19.00	ASE2-7	23.00	ASY2-7	9.00	ASU2-7	5.50
	★On-Off		4	ASA2-8	7.50	ASD2-8	19.00	ASE2-8	23.00	ASY2-8	9.00	ASU2-8	5.50
3	For.-Rev.-Stop		5	ASA3-1	12.00	ASD3-1	30.00	—	—	ASY3-1	13.50	ASU3-1	10.00
	Raise-Lower-Stop		5	ASA3-2	12.00	ASD3-2	30.00	—	—	ASY3-2	13.50	ASU3-2	10.00
	Up-Down-Stop		5	ASA3-3	12.00	ASD3-3	30.00	—	—	ASY3-3	13.50	ASU3-3	10.00
	Open-Close-Stop		5	ASA3-4	12.00	ASD3-4	30.00	—	—	ASY3-4	13.50	ASU3-4	10.00
	Fast-Slow-Stop		5	ASA3-5	12.00	ASD3-5	30.00	—	—	ASY3-5	13.50	ASU3-5	10.00
	Start-Stop	110V. Pilot Lt.†	6	ASA3-6	22.00	—	—	—	—	ASY3-6	23.00	ASU3-6	20.00
	Start-Stop	220V. Pilot Lt.‡	7	ASA3-7	22.00	—	—	—	—	ASY3-7	23.00	ASU3-7	20.00
	Start-Stop	440V. Pilot Lt.‡	7	ASA3-8	22.00	—	—	—	—	ASY3-8	23.00	ASU3-8	20.00
	Start-Stop	550V. Pilot Lt.‡	7	ASA3-9	22.00	—	—	—	—	ASY3-9	23.00	ASU3-9	20.00

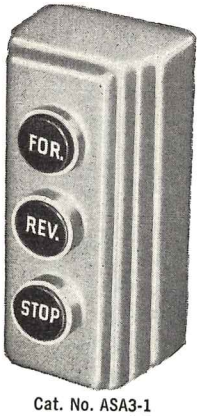
* Can be used as replacement interiors for the NEMA 4 & 7 devices. Use 4801ASZ—as interior for NEMA 1 devices.
† Replacement lamps: Tungsten—T 4½ 110.V. Part No. 561004 $2.10 list.
‡ Replacement lamp: Neon—NE45 110V. Part No. 561001 $2.10 list.
★ Rated 600 Volts A.C. only.

ORDERING INSTRUCTIONS:
Order by Class and Style number.

1963 FPE CATALOG P.97

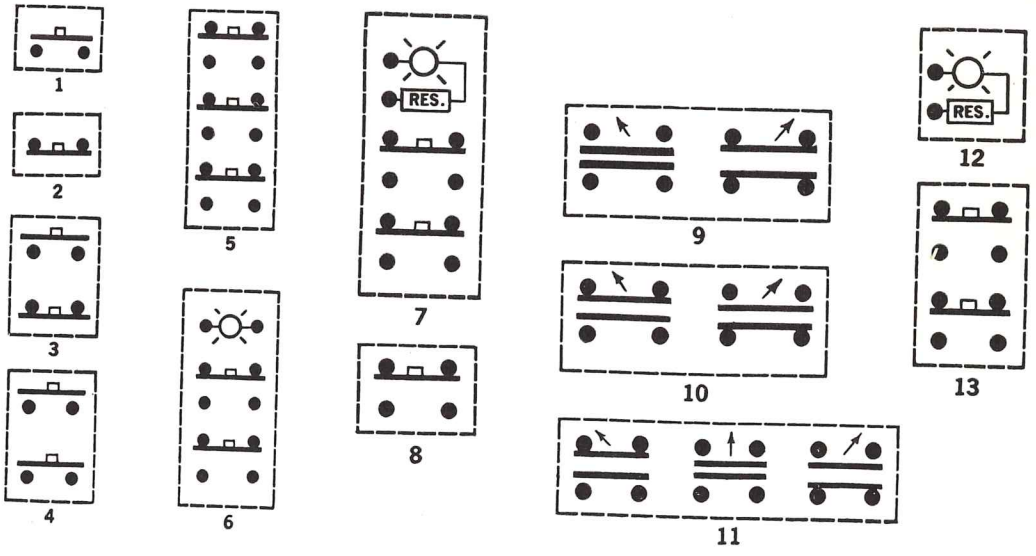


Cat. No. ASA2-1



Cat. No. ASA3-1

Contact Symbols



CLASS

4801 Heavy Duty Push Button Stations

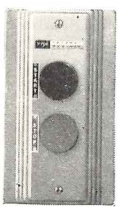
Class 4801 heavy duty push button stations are used in the control circuits of magnetic starters. The many forms of momentary contact push buttons, pilot lights, selector switches and accessories can be assembled into a wide variety of control stations. Sturdy construction combined with double break contacts on all units assure long trouble-free service.

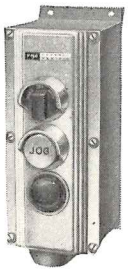
600 Volts A.C. or D.C. Maximum

No. of Units	Marking	Features	Symbol	NEMA TYPE 1 General Purpose Enclosure		NEMA TYPE 4 Water-Tight Enclosure		FLUSH TYPE No Pull Box	
				Style	Price	Style	Price	Style	Price
1	Start		8	AHA1-1	$11.00	AHD1-1	$23.00	AHY1-1	$11.00
	Stop		8	AHA1-2	11.00	AHD1-2	23.00	AHY1-2	11.00
	Stop	Lockout	8	AHA1-3	14.00	AHD1-3	26.00	AHY1-3	14.00
	Stop	Mushroom	8	AHA1-4	14.00	—	—	AHY1-4	14.00
	Jog		8	AHA1-5	11.00	AHD1-5	23.00	AHY1-5	11.00
	Reset		8	AHA1-6	11.00	AHD1-6	23.00	AHY1-6	11.00
	Off-On	2 Pos. Sel. Sw.	9	AHA1-7	12.00	AHD1-7	24.00	AHY1-7	12.00
	Safe-Run	2 Pos. Sel. Sw.	9	AHA1-8	12.00	AHD1-8	24.00	AHY1-8	12.00
	Fast-Slow	2 Pos. Sel. Sw.	10	AHA1-9	12.00	AHD1-9	24.00	AHY1-9	12.00
	Hand-Auto	2 Pos. Sel. Sw.	10	AHA1-10	12.00	AHD1-10	24.00	AHY1-10	12.00
	Jog-Run	2 Pos. Sel. Sw.	10	AHA1-11	12.00	AHD1-11	24.00	AHY1-11	12.00
	For.-Rev.	2 Pos. Sel. Sw.	10	AHA1-12	12.00	AHD1-12	24.00	AHY1-12	12.00
	Hand-Off-Auto	3 Pos. Sel. Sw.	11	AHA1-13	12.00	AHD1-13	24.00	AHY1-13	12.00
	For.-Off-Rev.	3 Pos. Sel. Sw.	11	AHA1-14	12.00	AHD1-14	24.00	AHY1-14	12.00
	Fast-Off-Slow	3 Pos. Sel. Sw.	11	AHA1-15	12.00	AHD1-15	24.00	AHY1-15	12.00
		Pilot Lgt. 110/220V.	12	AHA1-16	15.50	AHD1-16	27.50	AHY1-16	15.50
		Pilot Lgt. 440V.	12	AHA1-17	16.00	AHD1-17	28.00	AHY1-17	16.00
		Pilot Lgt. 550V.	12	AHA1-18	16.00	AHD1-18	28.00	AHY1-18	16.00
2	Start-Stop		13	AHA2-1	17.00	AHD2-1	26.00	AHY2-1	17.00
	Start-Stop	Lockout	13	AHA2-2	20.00	AHD2-2	29.00	AHY2-2	20.00
	Start-Stop	Mushroom	13	AHA2-3	20.00	—	—	AHY2-3	20.00
	Jog-Stop		13	AHA2-4	17.00	AHD2-4	26.00	AHY2-4	17.00
	For.-Rev.		13	AHA2-5	17.00	AHD2-5	26.00	AHY2-5	17.00
	Fast-Slow		13	AHA2-6	17.00	AHD2-6	26.00	AHY2-6	17.00
	Raise-Lower		13	AHA2-7	17.00	AHD2-7	26.00	AHY2-7	17.00
	Up-Down		13	AHA2-8	17.00	AHD2-8	26.00	AHY2-8	17.00
	Open-Close		13	AHA2-9	17.00	AHD2-9	26.00	AHY2-9	17.00
3	For.-Rev.-Stop		5	AHA3-1	22.00	AHD3-1	44.00	AHY3-1	22.00
	For.-Rev.-Stop	Lockout	5	AHA3-2	25.00	AHD3-2	47.00	AHY3-2	25.00
	Raise-Lower-Stop		5	AHA3-3	22.00	AHD3-3	44.00	AHY3-3	22.00
	Up-Down-Stop		5	AHA3-4	22.00	AHD3-4	44.00	AHY3-4	22.00
	Open-Close-Stop		5	AHA3-5	22.00	AHD3-5	44.00	AHY3-5	22.00
	High-Low-Stop		5	AHA3-6	22.00	AHD3-6	44.00	AHY3-6	22.00
	Fast-Slow-Stop		5	AHA3-7	22.00	AHD3-7	44.00	AHY3-7	22.00
	Start-Jog-Stop		5	AHA3-8	22.00	AHD3-8	44.00	AHY3-8	22.00
	(For.-Rev.) Start-Stop	2 Pos. Sel. Sw.	10-13	AHA3-9	23.00	AHD3-9	45.00	AHY3-9	23.00
	(Fast-Slow) Start-Stop	2 Pos. Sel. Sw.	10-13	AHA3-10	23.00	AHD3-10	45.00	AHY3-10	23.00
	(Jog-Run) Start-Stop	2 Pos. Sel. Sw.	10-13	AHA3-11	23.00	AHD3-11	45.00	AHY3-11	23.00
	(Hand-Off-Auto) Start-Stop	3 Pos. Sel. Sw.	11-13	AHA3-12	23.00	AHD3-12	45.00	AHY3-12	23.00
	Start-Stop	Pilot Lgt. 110/220V.	7	AHA3-13	26.50	AHD3-13	48.50	AHY3-13	26.50
	Start-Stop	Pilot Lgt. 440V.	7	AHA3-14	27.00	AHD3-14	49.00	AHY3-14	27.00
	Start-Stop	Pilot Lgt. 550V.	7	AHA3-15	27.00	AHD3-15	49.00	AHY3-15	27.00

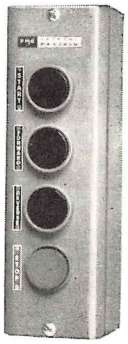
ORDERING INSTRUCTIONS:
1. Order by Class and Style number.
2. Specify pilot light color if other than red is required.

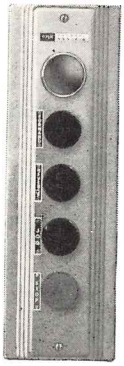
1963 FPE Catalog


Style AHY2


Style AHD3

Style AHA3

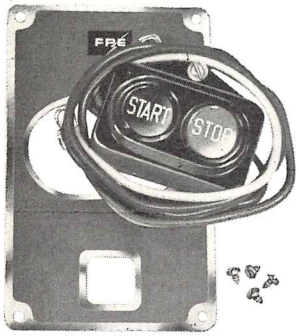

Style AHA4


Style AHY5

Style AHA8

Modification Kits - Renewal Parts Kits - Coils

Kits include complete instructions and all parts necessary for adding a "Start-Stop" push button or "Hand-Off-Auto" selector switch to standard contactors and starters mounted in NEMA 1 enclosures. The changes can be made quickly and easily and require only a screwdriver and pliers.



Style AM1

Electrical Interlock Kits

For use on series "B" starters only

Nema Size	Style Number	Price
0 and 1	BM8	$6.00
2	BM9	6.00
3 and 4	BM14	6.00

ORDERING INSTRUCTIONS: Order by Class 5470 and Style number.

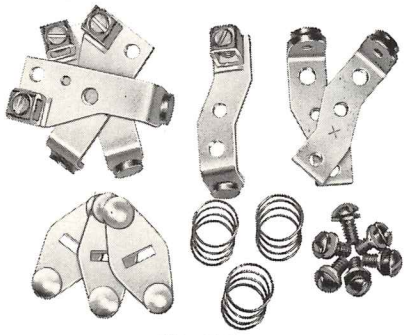
Modification Kits

CLASS 5470

EQUIPMENT TO BE MODIFIED			Modification	KIT REQUIRED	
Nema Size	Nema Enclosure	Class Number		Style	Price
00, 0, 1, 2 & 3	1	4102 4204	"Start-Stop" momentary contact push buttons.	AM1	$8.00
			"H-O-A" selector switch.	AM2	8.00
0, 1, 2 & 3	1	4214, 4215	"Start-Stop" momentary contact push buttons.	BM3	8.00
4	1	4204	"H-O-A" selector switch.	BM4	8.00
			Pilot light 110-220-440 V.	BM7	15.00

DISCOUNT SCHEDULE MS-1

Class 5480 renewal parts kits are available to facilitate the servicing of most contactors and starters. Each kit includes complete instructions and the necessary stationary contacts, movable contacts, and contact springs to service a 3 Pole device.


Style AR5

Renewal Parts Kits

CLASS 5480

Equipment to be Serviced		Kit Required	
Nema Size	Class Number	Style	Price
00	4102, 4204	AR14	$ 8.00
0	4004, 4102, 4204, 4214, 4215	AR1	8.50
0	4024, 4034, 4122, 4224, 4228, 4229	AR2	18.25
1	4004, 4102, 4204, 4214, 4215	AR3	9.00
1	4024, 4034, 4122, 4224, 4228, 4229	AR4	18.50
2	4102, 4204, 4214, 4215	AR5	11.50
2	4122, 4224, 4228, 4229	AR6	23.00
3	4102, 4204, 4214, 4215	AR7	41.00
3**	4102, 4204, 4214, 4215	BR16	39.00
3	4122, 4224, 4228, 4229	AR8	82.00
4	4102, 4204, 4214, 4215	AR9	14.50
4**	4102, 4204, 4214, 4215	BR15	50.00
5	4102, 4204, 4214, 4215	AR10	25.00
6	4102, 4204, 4214, 4215	Use two AR10 kits	

ORDERING INSTRUCTIONS:
Order by Class and Style number.

** Series "B" starters.

Coils

Magnet operating coils are available for a wide range of voltages and frequencies in addition to the more common ratings listed below. Coils can be readily installed in all magnetic contactors and starters. Complete instructions are included.

Nema Size	SINGLE VOLTAGE								DUAL VOLTAGE			
	110 Volts—60 Cy.		220 Volts—60 Cy.		440 Volts—60 Cy.		550 Volts—60 Cy.		115/230 Volts—60 Cy.		220/440 Volts—60 Cy.	
	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price
00, 0, 1	ACA101	$ 6.90	ACA106	$ 6.90	ACA111	$ 6.90	ACA116	$ 6.90	ACA126	$ 9.60	ACA151	$ 9.60
2	ACA201	8.30	ACA206	8.30	ACA211	8.30	ACA216	8.30	ACA226	11.00	ACA251	11.00
3	ACA301	9.90	ACA306	9.90	ACA311	9.90	ACA316	9.90	ACA326	12.10	ACA351	12.10
4	ACA401	13.20	ACA406	13.20	ACA411	13.20	ACA416	13.20	—	—	—	—
5	ACA501	16.50	ACA506	16.50	ACA511	16.50	ACA516	16.50	—	—	—	—
3†	BCA301	10.00	—	—	—	—	BCA316	10.00	—	—	BCA351	12.00
4†	BCA401	11.50	—	—	—	—	BCA416	11.50	—	—	BCA451	14.10

† Series "B" starters.

COIL CODE NUMBERS*

Volts	Cycles				
	60	50	40	30	25
110	—01	—02	—03	—04	—05
220	—06	—07	—08	—09	—10
440	—11	—12	—13	—14	—15
550	—16	—17	—18	—19	—20
600	—21	—22	—23	—24	—25
115/230	—26	—27	—28	—29	—30
220/440	—51	—52	—53	—54	—55

* The above code numbers are used as suffixes to the catalog numbers for magnetically operated devices to indicate coil voltage and frequency. Example: The catalog number for a Class 4204 Style AA13 starter with 220 volt 60 cycle coil is 4204AA13-06.

ORDERING INSTRUCTIONS:
1. Order standard coils by part number.
2. Order special coils by NEMA size, voltage, and frequency.

CLASS

5490 Thermal Overload Relay Heater Elements

Class 5490 heater elements are designed for use in conjunction with the thermal overload relays on motor starters to provide motor running overcurrent protection. If the heater is too small, it will cause the relay to trip unnecessarily; if it is too large, it will not provide sufficient protection. A wide range of heaters are provided in small increments to permit selection of the correct rating for each motor. Motors of the same horsepower do not necessarily have the same full load current, therefore heaters should be selected on the basis of actual motor nameplate ratings.

Heater Selection Instructions for Enclosed A-C Starters*

The current value at which a Class 5490 heater element will trip the overload relay in an ambient temperature of 40° C is about 125% of the minimum full load motor current value shown in the table. The following data will permit proper selection of heaters for various operating conditions.

Motor Duty Rating	Temperature Same at Starter and Motor	Temperature at Starter 15° C (27° F) Higher Than at Motor	Temperature at Starter 15° C (27° F) Lower Than at Motor
40° C Continuous	As Specified in Table	One Size Larger Than Table	One Size Smaller Than Table
50-55° C Continuous	One Size Smaller Than Table	As Specified in Table	Two Sizes Smaller Than Table

Heater Element Selection Table

Class	NEMA Size	Full Load Motor Current	Heater Element Style	Full Load Motor Current	Heater Element Style	Full Load Motor Current	Heater Element Style	Full Load Motor Current	Heater Element Style	Full Load Motor Current	Heater Element Style
4004 4024 4034	0-1-1½	.484 — .544	F.63	1.23 — 1.37	F1.60	3.08 — 3.45	F4.0	7.70 — 8.61	F10.0	19.2 — 21.4	F25
		.545 — .614	F.71	1.38 — 1.53	F1.80	3.46 — 3.84	F4.5	8.62 — 9.69	F11.2	21.5 — 24.2	F28
		.615 — .691	F.80	1.54 — 1.72	F2.0	3.85 — 4.29	F5.0	9.70 — 10.8	F12.6	24.3 — 27.2	F31.5
		.692 — .769	F.90	1.73 — 1.91	F2.25	4.30 — 4.83	F5.6	10.9 — 12.2	F14.2	27.3 — 30.7	F35.5
		.770 — .861	F1.0	1.92 — 2.14	F2.5	4.84 — 5.44	F6.3	12.3 — 13.7	F16	— —	—
		.862 — .969	F1.12	2.15 — 2.42	F2.8	5.45 — 6.14	F7.1	13.8 — 15.3	F18	— —	—
		.970 — 1.08	F1.26	2.43 — 2.72	F3.15	6.15 — 6.91	F8.0	15.4 — 17.2	F20	— —	—
		1.09 — 1.22	F1.42	2.73 — 3.07	F3.55	6.92 — 7.69	F9.0	17.3 — 19.1	F22.5	— —	—
	00-0-1-1½	0.47 — 0.50	F.63	1.15 — 1.28	F1.60	2.84 — 3.19	F4.0	7.20 — 7.99	F10.0	18.0 — 19.9	F22.5
		0.51 — 0.56	F.71	1.29 — 1.43	F1.80	3.20 — 3.59	F4.5	8.00 — 8.94	F11.2	20.0 — 22.3	F25
		0.57 — 0.63	F.80	1.44 — 1.59	F2.00	3.60 — 3.99	F5.0	8.95 — 9.99	F12.6	22.4 — 25.0	F28
		0.64 — 0.71	F.90	1.60 — 1.79	F2.25	4.00 — 4.47	F5.6	10.0 — 11.2	F13.0	25.1 — 27.9	F31.5
		0.72 — 0.79	F1.00	1.80 — 1.99	F2.50	4.48 — 4.99	F6.3	11.3 — 12.7	F14.2	28.0 — 30.0	F35.5
		0.80 — 0.89	F1.12	2.00 — 2.23	F2.80	5.00 — 5.59	F7.1	12.8 — 14.3	F16	— —	—
		0.90 — 1.00	F1.26	2.24 — 2.51	F3.15	5.60 — 6.29	F8.0	14.4 — 15.9	F18	— —	—
		1.01 — 1.14	F1.42	2.52 — 2.83	F3.55	6.30 — 7.19	F9.0	16.0 — 17.9	F20	— —	—
4204	2-3	9.70 — 10.8	F13.0	15.4 — 17.2	F20	24.3 — 27.2	F31.5	38.5 — 42.9	F50	61.5 — 69.1	F80
		10.9 — 12.2	F14.2	17.3 — 19.1	F22.5	27.3 — 30.7	F35.5	43.0 — 48.4	F56	69.2 — 76.9	F90
		12.3 — 13.7	F16	19.2 — 21.4	F25	30.8 — 34.5	F40	48.5 — 54.4	F63	77.0 — 85.9	F100
		13.8 — 15.3	F18	21.5 — 24.2	F28	34.6 — 38.4	F45	54.5 — 61.4	F71	86.0 — 90.0	F112
	4 (Clapper Type)	50.4 — 56.7	F4-63	64.0 — 71.9	F4-80	80.0 — 89.5	F4-100	101.0 — 113.9	F4-126	128.0 — 135.0	F4-160
		56.8 — 63.9	F4-71	72.0 — 79.9	F4-90	89.6 — 100.9	F4-112	114.0 — 127.9	F4-142	— —	—
	4 (Vertical Type)	45.0 — 52.9	F4-63	62.0 — 73.9	F4-112	83.0 — 94.9	F4-142	110 — 121	F4-200	— —	—
		53.0 — 61.9	F4-90	74.0 — 82.9	F4-126	95.0 — 109	F4-180	122 — 137	F4-225	— —	—
	5-6 *	90.5 — 103	F9.0	132 — 150	F12.6	193 — 219	F16	282 — 319	F22.5	410 — 464	F31.5
		104 — 118	F10.0	151 — 169	F13.0	220 — 249	F18	320 — 362	F25	465 — 529	F35.5
		119 — 131	F11.2	170 — 192	F14.2	250 — 281	F20	363 — 409	F28	530 — 540	F40
4214 4215 4224 4228 4229 4234	00-0-1	0.48 — 0.51	F.63	1.17 — 1.31	F1.60	2.97 — 3.34	F4.0	8.20 — 9.24	F10.0	21.6 — 24.1	F22.5
		0.52 — 0.57	F.71	1.32 — 1.48	F1.80	3.35 — 3.74	F4.5	9.25 — 10.3	F11.2	24.2 — 27.3	F25
		0.58 — 0.64	F.80	1.49 — 1.66	F2.00	3.75 — 4.19	F5.0	10.4 — 11.7	F12.6	27.4 — 30.0	F28
		0.65 — 0.73	F.90	1.67 — 1.85	F2.25	4.20 — 4.74	F5.6	11.8 — 13.1	F13.0	— —	—
		0.74 — 0.81	F1.00	1.86 — 2.09	F2.50	4.75 — 5.44	F6.3	13.2 — 14.9	F14.2	— —	—
		0.82 — 0.91	F1.12	2.10 — 2.34	F2.80	5.45 — 6.29	F7.1	15.0 — 16.9	F16	— —	—
		0.92 — 1.02	F1.26	2.35 — 2.64	F3.15	6.30 — 7.19	F8.0	17.0 — 19.0	F18	— —	—
		1.03 — 1.16	F1.42	2.65 — 2.96	F3.55	7.20 — 8.19	F9.0	19.1 — 21.5	F20	— —	—
4235 4236 4241 4242	2-3	10.0 — 11.1	F13	16.0 — 18.0	F20	25.8 — 28.9	F31.5	41.0 — 45.9	F50	65.5 — 73.7	F80
		11.2 — 12.5	F14.2	18.1 — 20.2	F22.5	29.0 — 32.4	F35.5	46.0 — 51.7	F56	73.8 — 82.9	F90
		12.6 — 14.2	F16	20.3 — 22.9	F25	32.5 — 36.4	F40	51.8 — 58.1	F63	83.0 — 93.2	F100
		14.3 — 15.9	F18	23.0 — 25.7	F28	36.5 — 40.9	F45	58.2 — 65.4	F71	93.3 — 100	F112
4244 4245 4246	4 (Clapper Type)	51.4 — 58.7	F4-63	65.3 — 73.3	F4-80	81.6 — 91.2	F4-100	103 — 115	F4-126	131 — 146	F4-160
		58.9 — 65.2	F4-71	73.4 — 81.5	F4-90	91.3 — 102	F4-112	116 — 130	F4-142	147 — 150	F4-180
5290 5300	4 (Vertical Type)	47.2 — 55.5	F4-63	65.0 — 77.5	F4-112	88.5 — 101	F4-142	117 — 131	F4-200	— —	—
		55.6 — 64.9	F4-90	77.6 — 88.4	F4-126	102 — 116	F4-180	132 — 150	F4-225	— —	—
	5-6 *	90.5 — 103	F9.0	132 — 150	F12.6	193 — 219	F16	282 — 319	F22.5	410 — 464	F31.5
		104 — 118	F10.0	151 — 169	F13.0	220 — 249	F18	320 — 362	F25	465 — 529	F35.5
		119 — 131	F11.2	170 — 192	F14.2	250 — 281	F20	363 — 409	F28	530 — 600	F40

* Heater selection for open type starters varies with the size of enclosure in which the device is to be mounted. Consult nearest FPE office for assistance.

* Heaters operate on secondary of current transformer.

HEATER ELEMENTS, ALL STYLES ..... **$1.50** each, List

ORDERING INSTRUCTIONS:
Order by Class and Style number.

Types FB and FH Encased, Dry Type Transformers

TYPE FB—NEMA CLASS B, 60 CYCLES, 1 TO 6 KVA, to 480 VOLTS
TYPE FH—NEMA CLASS H, 60 CYCLES, 7½ TO 10,000 KVA, up to 15,000 VOLTS

Type FH

Type FB

Type FB Transformer core and coils are compound embedded and encased in steel. Ideal unit for control and lighting circuits. Built to latest Class B, NEMA standards.

Type FH Transformers for power and lighting circuits are the smallest, lightest, and easiest to install encased dry type transformer available. This all new design is manufactured in accordance with the latest Class H, NEMA standards. A full line of type FH Transformers is available and are provided with or without special accessories.

Single Phase

Type FB—Secondary Voltage—120/240 Volts

Primary Voltage Connections	Standard Taps Provided	
240 x 480 Volts	No Taps	
480 Volts	Two—5% Taps F.C.B.N.	
KVA	List Price	Weight in lbs.
1	$ 45.00	22
1½	55.00	31
2	67.00	40
3	100.00	46
5	145.00	47

Type FH—Secondary Voltages—120/240, 240, 480 or 600 Volts

Primary Voltage Connection	Standard Taps Provided
240 Volts	One—5% Tap F.C.A.N. and Two—5% Taps F.C.B.N.
480 Volts	Two—2½% Taps F.C.A.N. and Four—2½% Taps F.C.B.N.
600 Volts	Two—2½% Taps F.C.A.N. and B.N. or Four—2½% Taps F.C.B.N.
2,400 to 15,000 Volts	Two—2½% Taps F.C.A.N. and Two—2½% Taps F.C.B.N.

600 Volt Insulation Class

Primary Voltage — 240 x 480 or 600 Volts					
KVA	List Price	Weight (lbs)	KVA	List Price	Weight (lbs)
7½	$ 200.00	110	75	$1030.00	550
10	250.00	125	100	1220.00	640
15	348.00	175	150	2025.00	825
20	460.00	185	167	2100.00	875
25	536.00	235	200	2396.00	1100
30	615.00	290	250	2880.00	1250
37½	685.00	350			
50	825.00	430			

5000 Volt Insulation Class

Primary Voltage — 2400, 4160 or 4800 Volts					
KVA	List Price	Weight (lbs)	KVA	List Price	Weight (lbs)
30	$ 615.00	320	167	$2250.00	915
37½	685.00	385	200	2542.00	1160
50	825.00	465	250	2990.00	1250
75	1050.00	585	333	3715.00	1600
100	1287.00	680	500	4985.00	2600
150	2075.00	865			

8660 and 15000 Volt Insulation Class

Primary Voltage — 6900, 7200, 7620, 12000, 13200 or 14400 Volts					
KVA	List Price	Weight (lbs)	KVA	List Price	Weight (lbs)
75	$1604.00	720	200	$2910.00	1400
100	1820.00	830	250	3410.00	1575
150	2484.00	1000	333	4205.00	1950
167	2715.00	1115	500	5200.00	2950

All single phase units provided with stub bars with NEMA standard drillings—no connectors furnished.

Three Phase

Type FB—Secondary Voltage—208Y/120 Volts

Primary Voltage Connections	Standard Taps Provided	
480 Volts	Two—5% Taps F.C.B.N.	
KVA	List Price	Weight in lbs.
3	$147.00	60
6	210.00	110

Type FB, both single and three phase transformers—
1, 1½ and 2KVA units supplied with flexible cable leads;
3, 5 and 6KVA units supplied with solderless connectors.

Type FH—Secondary Voltages—208Y/120, 240, 480Y/277, 480 or 600 Volts

Primary Voltage Connection	Standard Taps Provided
480 Volts (to 225 KVA)	Two—2½% Taps F.C.A.N. and Four—2½% Taps F.C.B.N.
240, 480 (above 225 KVA) and 600 Volts	Two—2½% Taps F.C.A.N. and B.N. or Four—2½% Taps F.C.B.N.
2,400 to 15,000 Volts	Two—2½% Taps F.C.A.N. and Two—2½% Taps F.C.B.N.

600 Volt Insulation Class

Primary Voltage — 240, 480 or 600 Volts					
KVA	List Price	Weight (lbs)	KVA	List Price	Weight (lbs)
9	$ 282.00	160	100	$1797.00	750
15	411.00	190	112½	1900.00	810
20	525.00	230	150	2320.00	980
25	615.00	260	200	2705.00	1235
30	708.00	285	225	2925.00	1285
37½	846.00	345	300	3430.00	1850
45	984.00	400	400	4580.00	2100
50	1074.00	450	500	5720.00	2450
60	1275.00	540	600	6825.00	2950
75	1518.00	640	750	8160.00	3650

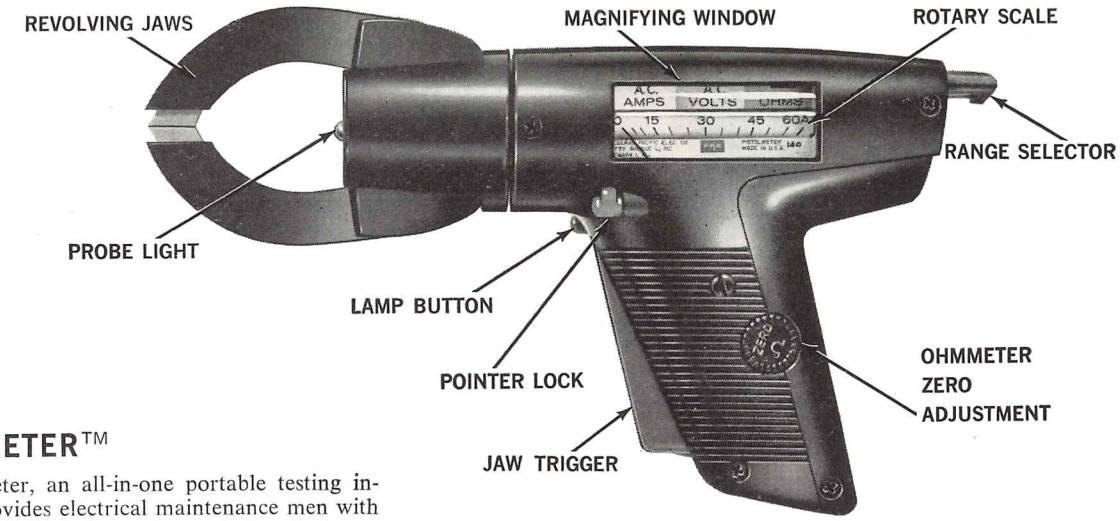
5000 Volt Insulation Class

Primary Voltage — 2400, 4160 or 4800 Volts					
KVA	List Price	Weight (lbs)	KVA	List Price	Weight (lbs)
45	$ 1206.00	435	225	$ 3150.00	1360
50	1400.00	485	300	3860.00	1875
60	1500.00	580	400	5000.00	2100
75	1620.00	680	500	6130.00	2900
100	2000.00	795	750	8520.00	3800
112½	2055.00	860	1000	10,590.00	4800
150	2475.00	1050	1500*	14,210.00	6400
200	2900.00	1300	2000*	18,255.00	8000

8660 and 15000 Volt Insulation Class

Primary Voltage — 6900, 7200, 7620, 12000, 13200, and 14400 Volts					
KVA	List Price	Weight (lbs)	KVA	List Price	Weight (lbs)
100	$ 2900.00	975	400	$ 6450.00	2450
112½	3080.00	1040	500	7350.00	3200
150	3620.00	1200	750	10,600.00	4200
200	4365.00	1600	1000	12,500.00	5300
225	4660.00	1700	1500*	14,900.00	7000
300	5190.00	2100	2000*	18,900.00	9000

* Not available with 208Y/120 or 240 Volt Secondary.
Solderless connectors supplied on three phase units through 50 KVA. Other sizes provided with stub bars with NEMA standard drilling.



PISTOLMETER™

The Pistolmeter, an all-in-one portable testing instrument, provides electrical maintenance men with the most practical and versatile metering device.

An Ammeter — with full range up to 600 amperes. Four white color-coded scales: 0 to 15 amperes, 0 to 60 amperes, 0 to 200 amperes, and 0 to 600 amperes for direct readings of current flow. Simply clamp the jaws around the conductor to be measured.

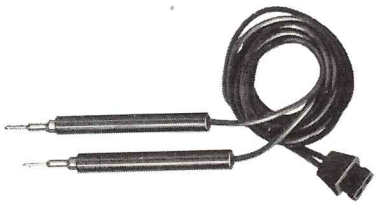
A Voltmeter — with two scales: 0 to 150 volts and 0 to 600 volts, both color-coded yellow. Measure the voltage by plugging the test leads into the cavity in the butt of the instrument and insert needle-sharp probes through the insulation of the conductors to be measured.

An Ohmmeter — with two blue color-coded scales: high and low for measuring resistance. Use the test probes as for voltmeter after first setting instrument on the desired ohmmeter scale.

FEATURES

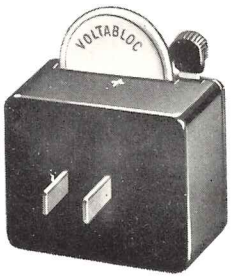
- Individual scales for direct readings — no complex multiple scales.
- Scale selection by simple thumb-operated plunger.
- Scale pointer lock to "freeze" the scale when taking measurements where it is difficult to see the scale.
- Zero scale adjustment for ohmmeter readings.
- Probe light for sighting instrument in the dark.
- Rotating jaws to facilitate clamping around conductors.
- Rechargeable battery for lifetime use. No new batteries should ever be required.
- Convenient pistol shape with trigger action.

Description	List Price
Complete Pistolmeter—including Holster Test leads Battery charger Spare battery	$59.50
Accessories, if purchased separately	
Pistolmeter holster	6.00
Battery charger	5.50
Rechargeable battery	2.50
Test leads, 48″ long—Set of two	3.50



Test leads are 48″ long, insulated for 3000 volts.

Rechargeable battery.



Battery charger and spare battery. To charge the battery, it is only necessary to slide it into the charger and plug into any 110 volt receptacle.

Holster is of top grain leather with a belt loop and compartment for test leads.

Table 310-12. Allowable Current-Carrying Capacities of Insulated Copper Conductors in Amperes

Not More than Three Conductors in Raceway or Cable or Direct Burial (Based on Room Temperature of 30° C. 86° F.)

Size AWG MCM	Rubber Type R Type RW / Type RU Type RUW (14-2) / Type RH-RW / Thermo-plastic Type T Type TW	Rubber Type RH / RUH (14-2) / Type RH-RW / Type RHW Thermo-plastic Type THW / Type THWN	Paper / Thermo-plastic Asbestos Type TA / Thermo-plastic Type TBS / Silicone Type SA / Var-Cam Type V / Asbestos Var-Cam Type AVB / MI Cable / RHH†	Asbestos Var-Cam Type AVA Type AVL	Impreg-nated Asbestos Type AI (14-8) Type AIA	Asbestos Type (14-8) Type A
14	15	15	25	30	30	30
12	20	20	30	35	40	40
10	30	30	40	45	50	55
8	40	45	50	60	65	70
6	55	65	70	80	85	95
4	70	85	90	105	115	120
3	80	100	105	120	130	145
2	95	115	120	135	145	165
1	110	130	140	160	170	190
0	125	150	155	190	200	225
00	145	175	185	215	230	250
000	165	200	210	245	265	285
0000	195	230	235	275	310	340
250	215	255	270	315	335	—
300	240	285	300	345	380	—
350	260	310	325	390	420	—
400	280	335	360	420	450	—
500	320	380	405	470	500	—
600	355	420	455	525	545	—
700	385	460	490	560	600	—
750	400	475	500	580	620	—
800	410	490	515	600	640	—
900	435	520	555	—	—	—
1000	455	545	585	680	730	—
1250	495	590	645	—	—	—
1500	520	625	700	785	—	—
1750	545	650	735	—	—	—
2000	560	665	775	840	—	—

CORRECTION FACTORS, ROOM TEMPS. OVER 30° C. 86° F.

C.	F.						
40	104	.82	.88	.90	.94	.95	—
45	113	.71	.82	.85	.90	.92	—
50	122	.58	.75	.80	.87	.89	—
55	131	.41	.67	.74	.83	.86	—
60	140	—	.58	.67	.79	.83	.91
70	158	—	.35	.52	.71	.76	.87
75	167	—	—	.43	.66	.72	.86
80	176	—	—	.30	.61	.69	.84
90	194	—	—	—	.50	.61	.80
100	212	—	—	—	—	.51	.77
120	248	—	—	—	—	—	.69
140	284	—	—	—	—	—	.59

† The current-carrying capacities for Type RHH conductors for sizes AWG 14, 12 and 10 shall be the same as designated for Type RH conductors in this Table.

Table 310-14. Allowable Current-Carrying Capacities of Insulated Aluminum Conductors in Amperes

Not More than Three Conductors in Raceway or Cable or Direct Burial (Based on Room Temperature of 30° C. 86° F.)

Size AWG MCM	Rubber Type R, RW, RU, RUW (12-2) / Type RH-RW / Thermo-plastic Type T, TW	Rubber Type RH / RUH (14-2) / Type RH-RW / Type RHW Thermo-plastic Type THW / Type THWN	Paper / Thermo-plastic Asbestos Type TA / Thermo-plastic Type TBS / Silicone Type SA / Var-Cam Type V / Asbestos Var-Cam Type AVB / MI Cable / RHH†	Asbestos Var-Cam Type AVA Type AVL	Impreg-nated Asbestos Type AI (14-8) Type AIA	Asbestos Type (14-8) Type A
12	15	15	25	25	30	30
10	25	25	30	35	40	45
8	30	40	40	45	50	55
6	40	50	55	60	65	75
4	55	65	70	80	90	95
3	65	75	80	95	100	115
*2	75	90	95	105	115	130
*1	85	100	110	125	135	150
*0	100	120	125	150	160	180
*00	115	135	145	170	180	200
*000	130	155	165	195	210	225
*0000	155	180	185	215	245	270
250	170	205	215	250	270	—
300	190	230	240	275	305	—
350	210	250	260	310	335	—
400	225	270	290	335	360	—
500	260	310	330	380	405	—
600	285	340	370	425	440	—
700	310	375	395	455	485	—
750	320	385	405	470	500	—
800	330	395	415	485	520	—
900	355	425	455	—	—	—
1000	375	445	480	560	600	—
1250	405	485	530	—	—	—
1500	435	520	580	650	—	—
1750	455	545	615	—	—	—
2000	470	560	650	705	—	—

CORRECTION FACTORS, ROOM TEMPS. OVER 30° C. 86° F.

C.	F.						
40	104	.82	.88	.90	.94	.95	—
45	113	.71	.82	.85	.90	.92	—
50	122	.58	.75	.80	.87	.89	—
55	131	.41	.67	.74	.83	.86	—
60	140	—	.58	.67	.79	.83	.91
70	158	—	.35	.52	.71	.76	.87
75	167	—	—	.43	.66	.72	.86
80	176	—	—	.30	.61	.69	.84
90	194	—	—	—	.50	.61	.80
100	212	—	—	—	—	.51	.77
120	248	—	—	—	—	—	.69
140	284	—	—	—	—	—	.59

* For three wire, single phase service and sub-service circuits, the allowable current-carrying capacity of RH, RH-RW, RHH, RHW, and THW aluminum conductors shall be for sizes #2-100 Amp., #1-110 Amp., #1/0-125 Amp., #2/0-150 Amp., #3/0-170 Amp. and #4/0-200 Amp.

† The current-carrying capacities for Type RHH conductors for sizes AWG 12, 10, and 8 shall be the same as designated for Type RH conductors in this Table.

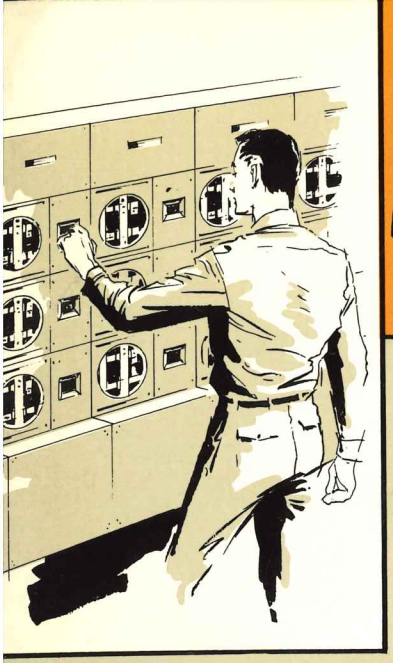
Maximum Number of Conductors in Trade Sizes of Conduit or Tubing

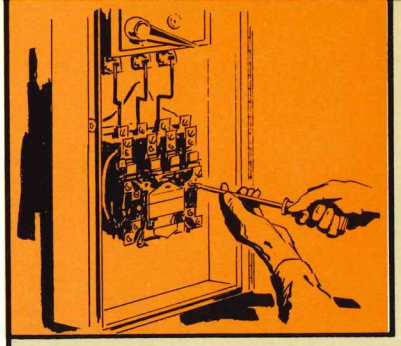
Types RF-2, RFH-2, R, RH, RW, RH-RW, RHW, RHH, RU, RUH, RUW, SF and SFF
Types TF, T, TW, THW and THWN

Size AWG or MCM	Maximum Number of Conductors in Conduit or Tubing (Based upon % conductor fill, Table 3, Chap. 9, for new work)											
	½ Inch	¾ Inch	1 Inch	1¼ Inch	1½ Inch	2 Inch	2½ Inch	3 Inch	3½ Inch	4 Inch	5 Inch	6 Inch
18	7	12	20	35	49	80	115	176				
16	6	10	17	30	41	68	98	150				
14	4	6	10	18	25	41	58	90	121	155		
12	3	5	8	15	21	34	50	76	103	132	208	
10	1	4	7	13	17	29	41	64	86	110	173	
8	1	3	4	7	10	17	25	38	52	67	105	152
6	1	1	3	4	6	10	15	23	32	41	64	93
4	1	1	1	3*	5	8	12	18	24	31	49	72
3		1	1	3	4	7	10	16	21	28	44	63
2		1	1	3	3	6	9	14	19	24	38	55
1		1	1	1	3	4	7	10	14	18	29	42
0			1	1	2	4	6	9	12	16	25	37
00			1	1	1	3	5	8	11	14	22	32
000			1	1	1	3	4	7	9	12	19	27
0000				1	1	2	3	6	8	10	16	23

Size AWG or MCM	Maximum Number of Conductors in Conduit or Tubing (Based upon % conductor fill, Table 3, Chap. 9, for new work)											
	½ Inch	¾ Inch	1 Inch	1¼ Inch	1½ Inch	2 Inch	2½ Inch	3 Inch	3½ Inch	4 Inch	5 Inch	6 Inch
250				1	1	1	3	5	6	8	13	19
300				1	1	1	3	4	5	7	11	16
350				1	1	1	3	4	5	6	10	15
400					1	1	1	3	5	6	9	13
500					1	1	1	3	4	5	8	11
600						1	1	1	3	4	6	9
700						1	1	1	3	3	6	8
750						1	1	1	3	3	5	8
800						1	1	1	2	3	5	7
900						1	1	1	1	3	4	7
1000						1	1	1	1	3	4	6
1250							1	1	1	3	3	5
1500								1	1	1	3	4
1750								1	1	1	2	4
2000								1	1	1	1	3

* Where an existing service run of conduit or electrical metallic tubing does not exceed 50 ft. in length and does not contain more than the equivalent of two quarter bends from end to end, two No. 4 insulated and one No. 4 bare conductors may be installed in 1-inch conduit or tubing.





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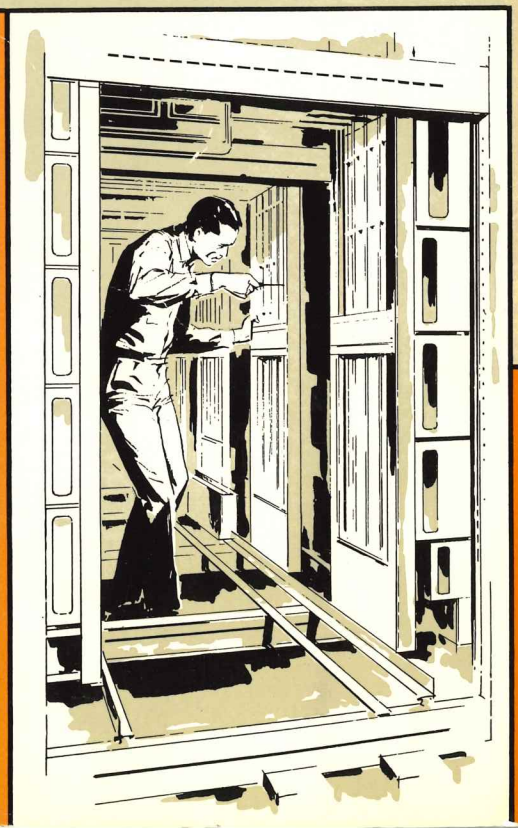

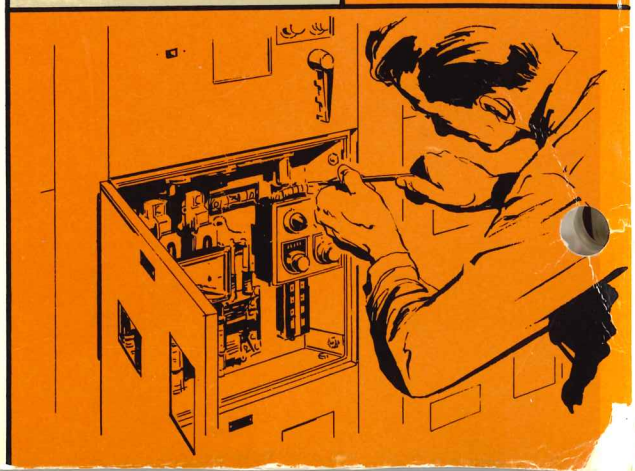

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SEPTEMBER 1963